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THE CLINICAL ASPECTS OF CUTANEOUS REACTIONS AFTER ARSPHENAMIN

JOSEPH V. KLAUDER, M.D.

PHILADELPHIA

Many fatalities following arsphenamin therapy are preceded by or associated with untoward cutaneous reactions. It becomes a matter of considerable importance, therefore, that one administering this therapy should be cognizant of the prodromal symptoms and later symptoms of untoward cutaneous reactions after arsphenamin.

Following the administration of the arsenicals arsphenamin, neo-arsphenamin, silver arsphenamin, sodium arsphenamin, sulphoxylate arsphenamin and sulpharsphenamin in the treatment of syphilis, various cutaneous reactions are observed. These reactions may be classed in two main groups. Group 1 is essentially an erythemosquamous eruption, so-called arsphenamin dermatitis, which, as will later be shown, is variably manifested. Group 2 is a vasomotor disturbance. The principal and most frequent reaction in this group is what is generally known as nitritoid reaction. There are other cutaneous reactions occurring after the arsphenamins which do not belong in Group 1 or Group 2 but may, for the convenience of discussion, be placed in a third group, although they are in no way related. This group includes such dissimilar phenomena as the Herxheimer reaction, purpura, herpes zoster, pigmentation, and localized, so-called "fixed" arsphenamin eruptions.

The cutaneous reactions embraced in the foregoing groups are objective. There are, in addition, subjective cutaneous reactions following arsphenamin therapy. These reactions, notably itching and paresthesia, are important prodromal symptoms which will be discussed later.

ERYTHEMOSQUAMOUS ERUPTIONS

Group 1 comprises an eruption consisting principally of erythematous, scaly macules, which may be sparse, diffuse or a universal erythema; if universal, of variable severity—an erythrodermia, or, if more severe, dermatitis exfoliativa.

The eruption is likely to appear first on the extremities (Fig. 1) and subsequently the trunk, or it may appear suddenly, involving the whole cutaneous surface (Fig. 6)

The erythematous macules are of variable size, nummular, guttate or morbilliform, or the eruption is scarlatiniform (Fig. 6). The erythematous macules, soon after their appearance, are likely to become confluent, producing a blotchy appearance (Fig. 2).

In some cases the eruption is limited to the extremities (Fig. 1) or to the trunk, and disappears in a few days. In perhaps the majority of cases, however, there is a gradual spreading, which results in a universal erythema (Fig. 5) with a fine, branlike desquamation, or what is more properly called erythrodermia, a more marked degree of which forms the well known picture of dermatitis exfoliativa (Fig. 7), in which there is abundant exfoliation of the epidermis.

Soon after its appearance, the eruption becomes scaly and itching is considerable. This, with the confluence and spreading, are conspicuous features.

When the eruption appears suddenly, it is most often scarlatiniform (Fig. 6) in appearance, later becoming an erythrodermia or further progressing into a dermatitis exfoliativa (Fig. 7). The latter never appears as the initial eruption, but is rather the terminal stage.

The more acute the onset of the eruption, the greater the likelihood of constitutional symptoms—headache, malaise, lassitude, gastro-intestinal symptoms and fever.

In these acute cases the itching is intense and there may be present, in addition to an erythematous eruption, conjunctivitis, and edema of the face and extremities, together with a vesicular eruption, which presents the appearance of an acute vesicular eczema—a dermatitis venenata (Fig. 8). Again, in these acute cases, associated with or without an erythematous eruption there may be a papular eruption (Fig. 4), especially of the trunk, which may be associated with large vesicles and bullae which particularly involve the hands and feet; or the papules may be entirely follicular, resembling somewhat lichen ruber pilaris. In the foregoing cases these cutaneous lesions are usually transient; the eruption in most cases eventuates in a generalized scaly erythema (Fig. 5) or in a dermatitis exfoliativa.

Appropriate mention may here be made of a patient who, after receiving the sixth injection of arsphenamin, some of which, through a faulty venipuncture, was injected into the tissues,[1] developed an acute cutaneous reaction consisting of a diffuse papular eruption, with large vesicles and bullae on the forearms, hands and feet. The patient had a temperature of 101 F. and a pronounced stomatitis. Some weeks later the cutaneous picture was one of dermatitis exfoliativa.

1. In my experience, a large percentage of patients with an arsphenamin dermatitis occurs in those in whom, through a faulty venipuncture, the drug is injected outside the vein with a resultant local reaction (Fig. 3). This has been so frequently noted that it is in all probability not a coincidence. In the administration of the arsphenamins, a faulty venipuncture which results in the injection of the drug outside the vein is potent of harm other than the resulting pain and discomfort, and should therefore be assiduously guarded against. This has been previously pointed out and more fully discussed (Klauder, J. V.: Hypersensitiveness to Local Contact with the Arsphenamins Producing Chronic Eczematoid Dermatitis and Asthmatic Symptoms, Arch. Dermat. & Syph. **5**: 486-492 [April] 1922).

Indeed, the eruption appearing after arsphenamin simulates other skin diseases. A lichen planus-like eruption following arsphenamin, many instances of which have been reported, closely resembles lichen planus both clinically and histologically. As mentioned above, the eruption is commonly scarlatiniform or morbilliform, which together with constitutional symptoms, may be confused with scarlet fever or measles. In other cases the eruption at first may considerably resemble pityriasis rosea, seborrheic dermatitis and papular eczema.

Fig. 1.—A mild, erythematous, scaly eruption following arsphenamin therapy, in a patient from the clinic of Dr. J. F. Schamberg. It consisted of variable sized macules confined to the extremities, and was of short duration.

In the foregoing regard it is interesting to note that Brooke and Roberts,[2] writing on the action of arsenic on the skin as observed in the epidemic of arsenic poisoning occurring in England, mention seborrheic dermatitis, lichen planus, psoriasis and papular syphilid-like eruptions and pemphigoid eruptions—large vesicular and bullous lesions particularly involving the hands and feet. In addition, other skin diseases were simulated.

Of the erythemosquamous group, the morbilliform type of eruption and erythrodermia are perhaps the most frequent; next is dermatitis exfoliativa. Erythrodermia and dermatitis exfoliativa are of the longest duration, frequently existing many weeks or months before complete recovery ensues. The prognosis is worse with dermatitis exfoliativa.

The incidence of the erythemosquamous group of cutaneous reaction is variably given by different writers. Harrison [3] observed, in the course of 80,000 injections in 10,000 syphilitic patients, 124 cases of dermatitis, of which twenty-six were severe, twenty-four moderately severe, and seventy-four mild or fleeting. Moore and Keidel [4] record twenty-one cases of dermatitis in the course of 47,000 administrations of arsphenamin products. Parnell and Fildes [5] noted thirty-eight cases of dermatitis in 1,250 men receiving 6,588 injections of neo-arsphenamin; Stokes and Cathcart,[6] approximately thirty-eight cutaneous reactions of various types in the course of 44,000 injections of arsphenamin.[7]

Dermatitis exfoliativa and, indeed, erythrodermia is not solely seen as an untoward cutaneous reaction after arsphenamin. The term is applied to a number of inflammatory affections of the skin, which have in common the symptoms of redness, abundant exfoliation of the epidermis and universal distribution. Certain of them are primary diseases (Wilson-Brocq variety); others are secondary to other inflammatory affections, such as eczema, dermatitis or psoriasis, of which they may be the terminal stage or the sequel. It is not possible to differentiate erythrodermia or dermatitis exfoliativa following arsphenamin therapy from the similar condition arising from other causes.

The clinical picture of dermatitis exfoliativa (Fig. 7)—the intense redness and abundant desquamation affecting the greater part of the whole of the skin—is well known and need not be detailed. The disease following arsphenamin therapy does not pursue such a chronic course as the disease arising from other causes. In the latter instances it generally lasts many months or years. On the other hand, arsphenamin dermatitis exfoliativa, in my experience, involutes in a relatively short time, or the patient succumbs.

The erythemosquamous group of cutaneous reactions after the arsphenamins is probably an expression of arsenical poisoning [8]—an arsenical dermatitis.

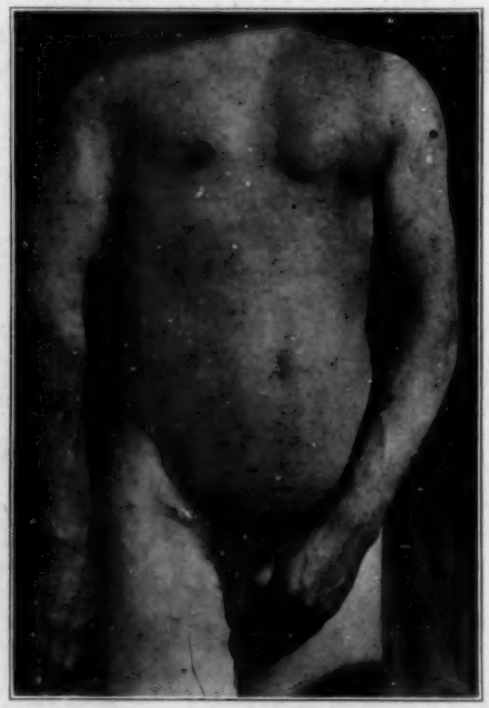

Fig. 2.—An erythematous, scaly eruption following arsphenamin therapy: At its onset it greatly resembled pityriasis rosea; later the lesions became confluent, forming the irregular sized patches shown here. The eruption disappeared in about three months.

2. Brooke, H. G., and Roberts, L.: The Action of Arsenic on the Skin as Observed in the Recent Epidemic of Arsenical Beer Poisoning, Brit. J. Dermat. **13**: 121-148, 1901.

3. Harrison, L. W.: Critical Review of the Treatment of Syphilis, Quart. J. Med. **10**: 291 (July) 1917.

4. Moore, J. E., and Keidel, Albert: Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis, Arch. Int. Med. **27**: 716-747 (June) 1921.

5. Parnell, R. J., and Fildes, P. G.: A Clinical Study of the Toxic Reactions Which Follow the Intravenous Administration of 914, Pub. M. Res. Com., London, 1919.

6. Stokes, J. H., and Cathcart, E. P.: Contributory Factors in Postarsphenamin Dermatitis, with Special Reference to the Influence of Focal and Intercurrent Infection, Arch. Dermat. & Syph. **7**: 14-49 (Jan.) 1923.

7. It is my impression that the incidence of postarsphenamin dermatitis is increasing.

8. The literature is replete with theories regarding the pathogenesis of arsphenamin dermatitis. Postarsphenamin cutaneous reactions are in all probability dependent on an interplay of various conditions which intimately concern the metabolism of arsphenamin of which little is known. The pathogenesis of arsphenamin dermatitis is discussed by: Schiff, P.: La génèse des érythèmes post-salvarsaniques, Ann. de mal. vén. **14**: 257-278, 1921. Moore, J. E., and Keidel, Albert (Footnote 4). Stokes, J. H., and Cathcart, E. P. (Footnote 6). Intravenous administration of sodium thiosulphate is a valuable agent in the treatment of arsphenamin dermatitis (McBride, W. L., and Dennie, W. C.: Treatment of Arsphenamin Dermatitis and Certain Other Metallic Poisonings, Arch. Dermat. & Syph. **7**: 63-68 [Jan.] 1923).

The cutaneous symptoms of arsenic poisoning may be divided into subjective and objective. The subjective manifestations are erythematous, papular, vesicular, bullous, pustular and ulcerative lesions, a generalized scaly erythema, either erythrodermia or dermatitis exfoliativa, pigmentation, hyperkeratosis, herpes zoster, hyperhidrosis and erythema of the palms and soles,

Fig. 3.—A morbilliform type of postarsphenamin dermatitis: The eruption developed acutely, and was associated with constitutional symptoms; it involuted without eventuating into a dermatitis exfoliativa; in the administration of arsphenamin, a faulty venipuncture was made, which resulted in a local reaction, seen on the left arm; the association of a postarsphenamin dermatitis with such a local reaction is commented on in Footnote 1.

which is usually associated with itching pain and tenderness—erythromelalgia.

The objective symptoms are pruritus, paresthesia, pain and tenderness—erythromelalgia.

Almost all of the foregoing subjective and objective cutaneous symptoms of arsenic poisoning occur after the administration of the arsphenamin products. It is therefore logical to conceive all of the untoward cutaneous reactions after arsphenamin therapy, with the exception of the vasomotor disturbances, as due to the direct action of arsenic.

It becomes apparent that the erythemosquamous group of cutaneous reactions after arsphenamin, like the cutaneous reactions after the ingestion of arsenic in another form, is protean in its manifestations. Since it is of vital importance that arsphenamin administration be withheld after the appearance of untoward cutaneous reactions, it becomes the part of wisdom to regard with suspicion any eruption appearing in the course of arsphenamin administration, particularly if it is pruritic and is erythemosquamous in character. As mentioned before, the course of arsphenamin eruptions—the tendency of the erythematous lesions to become confluent and develop into an erythrodermia—has important differentiating features.

SUBJECTIVE CUTANEOUS REACTIONS AFTER ARSPHENAMIN

The subjective cutaneous reactions following arsphenamin administration are pruritus and paresthesia. The former is an important symptom of intolerance, and has been rightly styled a danger signal, since it forecasts, if arsenical treatment is continued, the appearance of more severe symptoms of intolerance to the drug. It is usually generalized, appearing about twenty-four hours after treatment, and is a transient reaction. It may, however, appear localized to the palms, in which event it may be associated with erythema of these parts. Mention may here be made of a patient in the early stage of syphilis who received biweekly injections of 0.9 gm. of neo-arsphenamin. After the tenth consecutive injection, the patient complained of itching of both palms, and there was slight erythema of these parts. Despite this warning symptom, treatment was continued. After the twelfth injection the patient experienced a severe general reaction consisting of vomiting, diarrhea, fever and lassitude, which incapacitated her for three days. A rest period was instituted, after which time less intensive treatment was administered.

Paresthesia appearing after arsphenamin therapy should be placed in the same category as pruritus, although its significance has not been so much stressed as the latter symptom. It invariably appears in the feet, and ascends if arsenical therapy is continued. The patients frequently complain of their feet being "asleep." In very exceptional cases it appears after a few injections of one of the arsphenamins. On the other hand, it may not appear even after prolonged continuous treatment with the arsenicals. In my experience, a large percentage of patients develop paresthesia following from eight to ten consecutive weekly injections of a full dose of one of the arsphenamins. It is more likely to appear after the use of neo-arsphenamin

Fig. 4.—A postarsphenamin dermatitis: Prior to its appearance, the patient experienced nitritoid crises and a severe general reaction, which occurred each time after the three previous injections of arsphenamin; the first cutaneous manifestation was an accentuation of a patch of seborrheic dermatitis in the axilla; later a papular eruption appeared on the trunk and an erythemosquamous eruption on the forearms and thighs.

than arsphenamin. It is doubtless an expression of an arsenical neuritis.

There is not only a striking analogy between arsphenamin dermatitis and the cutaneous symptoms of arsenic poisoning, but there exists an analogy between

other untoward reactions after arsphenamin and other symptoms of arsenic poisoning.

In the foregoing regard, reference is made to gastrointestinal symptoms, anorexia, malaise, lassitude, headache, loss of weight and neuritis. These symptoms may appear after too prolonged administration of the arsphenamins. Appropriate mention may here be made of a patient who received biweekly injections of 0.9 gm. of neo-arsphenamin for eighteen consecutive injections. Following this treatment she complained of lassitude, anorexia and headache, and lost 20 pounds (9 kg.). There was tenderness on deep pressure over the calves. These symptoms doubtless manifested a state of chronic arsenic poisoning.

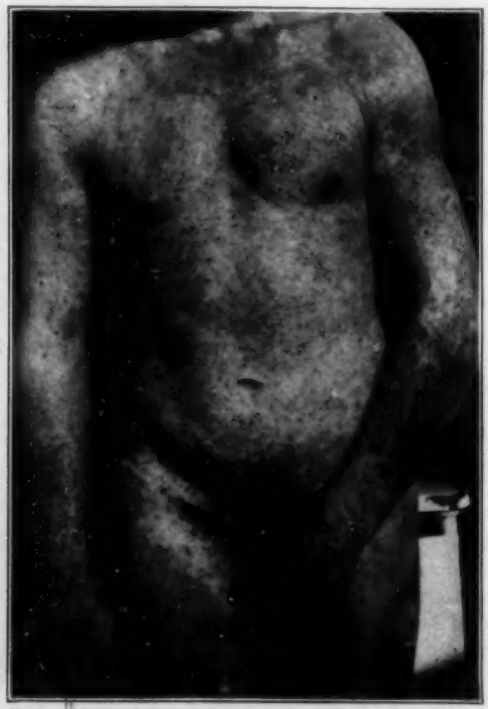

Fig. 5.—Appearance of patient in Figure 4 two weeks later: The cutaneous picture approached that of an erythrodermia.

It is not my purpose here to discuss the treatment of syphilis with arsphenamin, but it may be pointed out, that, in view of the variable individual tolerance of the syphilitic patient to arsenic, it is not practicable to carry out, as a routine, a formulated plan of treatment with the arsphenamins. This particularly applies to the much in vogue intensive treatment of syphilis with these drugs. The patient's tolerance to arsphenamin must first be determined before a plan of treatment can be enforced. Since this tolerance is variable, arsphenamin therapy must necessarily vary accordingly. A plan of treatment suitable to one patient is not always adaptable to another patient. It is incumbent on the physician practicing the arsphenamin therapy of syphilis to be familiar with the symptoms of intolerance to this drug. All of the objective and subjective cutaneous reactions detailed in this paper, with the exception of the Herxheimer reaction, are symptoms of intolerance to the drug. In addition, constantly recurring severe general reactions after arsphenamin administration also constitute symptoms of intolerance.

If symptoms of intolerance are present, treatment with arsphenamin cannot be forced. It is imperative in these circumstances to interdict temporarily arsenical treatment; or it may perhaps suffice to increase the interval between treatment or to decrease the dosage. If treatment is continued unmodified, the patient invariably becomes more intolerant and reaches a state of complete intolerance to the drug, in which event it is not possible to administer the arsenicals, except possibly in very small amounts. The foregoing emphasizes the importance of treating the patient as well as the disease.

Following the recovery of the patient from arsphenamin dermatitis, particularly the more severe reactions, further administration of arsphenamin should be practiced with considerable caution. In some patients a repetition of the cutaneous reaction occurs; in others it is possible to administer the drug without any such reaction. In the latter event, however, these patients have less tolerance for arsenic to such an extent that arsphenamin therapy is much restricted. In this regard it is of interest to note that Putnam,[9] writing on chronic arsenic poisoning, pointed out that a person who has once been poisoned is sometimes subsequently affected by a very small injection of the drug.

VASOMOTOR REACTION AFTER ARSPHENAMIN

This group consists of what is generally known as nitritoid crises and urticaria. These reactions appear during or immediately after intravenous injection.

The name nitritoid crises has been given by Milian because of the similarity of the symptoms seen in this phenomenon to those produced by amyl nitrite. The usual symptom is an erythema, which starts on the upper part of the chest, and ascends, involving the neck and the face. Concomitant with its appearance there is associated some or all of the following: a sense of constriction in the chest, a sensation of fulness in the head, coughing, congestion of the conjunctiva, dilatation of the pupils, rapid pulse and backache. If the reaction is severe, the face becomes intensely congested, the lips and tongue may swell, the sense of constriction in the chest is considerable, there is respiratory distress, there may be some convulsive twitching of the limbs, and the patient may lose consciousness. The reaction is invariably a transient one, although in the severe cases a fatal outcome has been reported. As to the frequency of the

Fig. 6.—Scarlatiniform type of postarsphenamin dermatitis in a patient from the clinic of Dr. J. F. Schamberg: The eruption appeared acutely and was associated with constitutional symptoms and fever.

9. Putnam, J. J.: Chronic Arsenic Poisoning Especially from Wall Paper: Analysis of Twenty-Five Cases, Boston M. & S. J. **120**: 235, 1889; **122**: 421, 1890.

reaction, it occurs probably in less than 1 per cent. of injections. Jones and Gibson [10] found that the incidence in their experience was 0.53 per cent. of injections. On the other hand, Milian [11] observed it in 4.8 per cent. of injections administered to 532 patients. There is no doubt that different batches of the arsphenamins vary in their power of promoting these vasomotor effects.

Fig. 7.—Same patient as in Figure 6 three weeks later: The cutaneous picture was that of dermatitis exfoliativa, the duration of which was six months; since recovery, the patient has had apparently causeless recurrences of an erythrodermic eruption.

The cause of nitritoid crises is not definitely known, although many explanations have been given.[12] Chief among these are the opinions of Milian,[11] Stühmer,[13] Danysz,[14] Berman,[15] Schamberg, Kolmer and Raiziss,[16] and more recently the conclusions, based on laboratory studies, of Hanzlik and Karsner,[17] and of Oliver and his associates [18] These have been reviewed by many writers, and need not be reiterated.

Urticaria,[19] an instance of which is shown in Figure 9, is considerably less common than nitritoid crises. It may be associated with or succeed nitritoid crises. It is more often seen after prolonged administration of arsphenamin. After its initial appearance, its recurrence is variable; it may or may not appear again after repeated injection of the same drug. Usually the eruption lasts only a few hours, exceptionally much longer.

THE JARISCH-HERXHEIMER REACTION

In untreated syphilitic patients in the acute stage, there occurs an accentuation of the eruption within twenty-four hours after the initial administration of one of the arsphenamins. Such accentuation is noted in all patients treated with a full dose; it is less likely to occur after a smaller dose, and can be entirely avoided by the initial injection of a very small dose of the drug. With the accentuation of the eruption there may be fever and constitutional symptoms. This phenomenon is known as the Jarisch-Herxheimer reaction.

This reaction, originally described by Jarisch [20] in 1895, and later by Jadassohn,[21] was a local one, an accentuation, reddening and swelling of the macular and papular rashes occurring within twenty-four hours after the initial use of mercury, administered in sufficient quantity either by inunctions or intramuscularly.

Before the advent of arsphenamin, Herxheimer and Krause,[22] in 1902, were the first to write comprehensively concerning the reaction and to suggest an explanation. They regarded it as due to the action of mercury on the hypersensitive diseased cells. They pointed out the diagnostic value of the reaction.

Its occurrence following the advent of arsphenamin was given as a further proof that this drug exerts a powerful direct effect on *Spirochaeta pallida*.

Ehrlich's explanation of the Herxheimer reaction is perhaps the present conception of this phenomenon; that is, it arises from liberation of toxins resulting from the lytic action of arsphenamin on the spirochete.

Another explanation of the Herxheimer reaction is based on experimental studies notably of Heinz [23] and of Hoppe and Schreiber [24] on the results of introducing arsenic into the circulation of animals. Arsenic thus administered is a violent vascular poison, producing its effects both locally on the neurovascular endings, the endothelium, and the clotting power of the blood itself, and centrally on the vasoconstrictor center, paralyzing this and exalting the functions of vasodilatation. Hyperplasia and stasis on the venous side are the invariable sequelae, and lead to death from cerebral anemia. Vascular damage in the pancreas and mesentery of rabbits has been studied by Hoppe and Schreiber and others, and the results have suggested a

Fig. 8.—Vesicular eruption following arsphenamin therapy; in addition there was an erythemosquamous eruption on the trunk, an edema of the face, conjunctivitis and constitutional symptoms and fever; the eruption terminated in dermatitis exfoliativa, which lasted five months.

10. Jones, L., and Gibson, A. J.: Salvarsan Treatment of Syphilis, Brit. M. J. **1**: 152-154 (Feb. 3) 1917.
11. Milian, M.: Accidents cérébraux et réaction d'Herxheimer: les intolerants du 606, Bull. Soc. franç. de dermat. et de syph. **23**: 169, 520-549, 1912.
12. In a consideration of the pathogenesis of nitritoid crises, it is important to bear in mind that the same phenomenon appears after intravenous therapy other than arsphenamin; for example, gelatin, and, indeed, the patient's own serum, as in autoserotherapy. This occurrence points to a colloidal reaction as the basis of the phenomenon.
13. Stühmer, A.: Salvarsanserum, München. med. Wchnschr. **61**: 747-747, 1914, and two other papers in same journal during same year.
14. Danysz, J.: Les propriétés physicochemiques des produits du groups des arsenobenzenes: leurs transformations dans l'organisme, Ann. d. l'Inst. Pasteur **31**: 114, 1917.
15. Berman, L.: The Nitritoid Crises After Arsphenamin Injections, Arch. Int. Med. **22**: 217 (Aug.) 1918.
16. Schamberg, J. F.; Kolmer, J. A., and Raiziss, G. W.: Experimental and Clinical Studies of the Toxicity of Dioxydiamino-Arsenobenzene Dichlorhydrate, J. Cutan. Dis. **35**: 286 (May-June) 1917.
17. Hanzlik, P. J., and Karsner, H. T.: Anaphylactoid Phenomena from the Intravenous Administration of Various Colloids, Arsenicals and Other Agents, J. Pharmacol. & Exper. Therap. **14**: 379, 1920.
18. Oliver, Jean; and Douglas, Ethel: Biological Reactions of Arsphenamin, I, The Mechanism of Its Agglutinative Action on Red Blood Cells in Vitro, J. Pharmacol. & Exper. Therap. **19**: 187 (March) 1922, and other articles in this and other journals, during the same year.
19. Vasomotor reactions after arsphenamin can be controlled or prevented by a prior injection of atropin or epinephrin (Stokes, J. H.: Atropin and Induced Antianaphylaxis as a Protection Against Acute Arsphenamin Reactions, J. A. M. A. **72**: 241-243 [Jan. 25] 1919). A rest period in treatment or changing the brand of arsphenamin may accomplish the same purpose.
20. Jarisch: Therapeutische Versuche bei Syphilis, Wien. med. Wchnschr. **45**: 720-723, 1895.
21. Jadassohn, J.: Die venerische Krankheiten, in Ebstein und Schwalbe: Handbuch der praktischen Medizin, Stuttgart, 1898, p. 580.
22. Herxheimer and Krause: Ueber eine bei syphilitischen vorkommende Quecksilberreaktion, Deutsch. med. Wchnschr. **28**: 895, 1902.
23. Heinz, R.: Handbuch der experimentelle Pathologie und Pharmakologie **1**: 929, 1905.
24. Hoppe and Schreiber, quoted from Schindler, Carl: Der Salvarsantod, Berlin, 1914.

new and more scientific explanation of the Herxheimer reaction than that which would assign its appearance to a surplus of surviving spirochetes and their endotoxins. The vasotrophic action of arsphenamin is more marked when the organ observed is first artificially damaged (e. g., ligature of the pancreatic duct), and it is suggested that the local lesions of a syphilitic roseola are loci minoris resistentiae, in which the additional vasotrophic influence of the drug would cause exacerbation of the already existing vascular dilatation.

Besides the foregoing "local" reaction, Neisser mentions a "general" one after treatment with arsphenamin, which is characterized by transitory increase of the headache in cerebral syphilis, and of the lightning pains in tabes.

At present the term "Herxheimer reaction" is used in a still more general way than Neisser's "general" reaction. It is given as the explanation of the "provocative" Wassermann reaction. It is used to explain local reactions other than in the original sense, for instance, a rupture of an aneurysm following the administration of arsphenamin, or acute yellow atrophy of the liver subsequent to jaundice and arsphenamin therapy.[25]

LOCALIZED ARSPHENAMIN DERMATITIS

A number of German writers have recently reported the occurrence of sharply circumscribed erythematous macules of variable size, appearing on different parts of the body after the administration of one of the arsphenamins. These have been called "fixed" arsphenamin eruptions. The characteristic feature of these eruptions is that they appear at the same site soon after each injection of the drug, and are usually of short duration. Such cases have been reported notably by Nägeli,[26] Fuchs [27] and Schönfeld.[28]

Fig. 9.—Urticarial eruption that developed within a few hours after an intravenous injection of arsphenamin; a similar eruption appeared each time after prior injections of the drug.

HERPES FOLLOWING ARSPHENAMIN THERAPY

The relation between herpes zoster and the administration of arsenic, first pointed out by Jonathan Hutchinson, is now well known. Herpes simplex, as well as herpes zoster, is occasionally observed after arsphenamin treatment.

Fig. 10.—Postarsphenamin pigmentation which appeared after the administration of about 100 injections of arsphenamin; it differed in no way from the well known picture of arsenical pigmentation following the prolonged oral ingestion of arsenic; arsenic in no other form was taken by the patient.

PURPURA FOLLOWING ARSPHENAMIN THERAPY

The occurrence of purpura as an untoward cutaneous reaction after arsphenamin is doubtless in line with the well known vasculotoxicity of arsenic. It is, however, a rare occurrence. Coincident with purpura there may be bleeding from the nose and gums, and other evidences of a blood dyscrasia. In the patient whom I saw, in addition to the foregoing symptoms the blood picture was that of an aplastic anemia. Labbé and Langlois [29] report two fatal cases. In one patient, purpura and hemorrhages from the nose and gums appeared following treatment with neo-arsphenamin. Death occurred ten days later.

POSTARSPHENAMIN PIGMENTATION

Pigmentation, as well as palmar and plantar hyperkeratoses, characteristic arsenical dermatoses, have been observed following arsphenamin therapy in patients who have never taken arsenic in any other form. Such

25. The Herxheimer reaction may be called an expression of the "heavy artillery" action of arsphenamin, and is from this point of view a vicious reaction. Its presence is prognostically of bad significance and should be avoided in the arsphenamin therapy of syphilis. The purpose of this paper forbids further discussion of this important phenomenon. A further discussion may be found in my paper on Early Neurosyphilis Asymptomatica with Report of Observations and Cases, Am. J. Syph. **3**: 559 (Oct.) 1919. I discussed the Herxheimer reaction in experimental syphilis in rabbits in the article on Bismuth in the Treatment of Syphilis, Report of Clinical and Experimental Studies, Arch. Dermat. & Syph. **7**: 721-744 (June) 1923.

26. Nägeli, O.: Fixes Neosalvarsan Exanthem und Adrenalinwirkung, Cor.-Bl. f. Schweiz. Aerzte **47**: 1921 (Sept. 29) 1917.

27. Fuchs, D.: Fixe Salvarsanexanthem, Deutsch. med. Wchnschr. **45**: 1276-1277, 1919.

28. Schönfeld, W.: Fixe salvarsanexantheme, Deutsch. med. Wchnschr. **46**: 11-12, 1920.

29. Labbé, M., and Langlois, S.: Hemorrhagic Purpura from Therapeutic Arsenic Poisoning, Bull. et mém. Soc. méd. d. hôp. de Paris **43**: 786-788 (July 25) 1919.

cases have been reported by Philip,[30] Hofmann,[31] Heller[32] and others. The pigmentation and hyperkeratoses differ in no way from that occurring after prolonged oral administration of arsenic.

An instance of arsenical pigmentation appearing after arsphenamin treatment is shown in Figure 10. This patient received a total of 100 injections of arsphenamin prior to the appearance of a diffuse pigmentation involving the trunk. Arsenic in no other form was taken by the patient.

1807 Spruce Street.

A BOTANIC SURVEY OF KANSAS CITY, MO., AND NEIGHBORING RURAL DISTRICTS

WITH REFERENCE TO THE FLORA RESPONSIBLE FOR HAY-FEVER, ASTHMA AND DERMATOSES

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AND
O. C. DURHAM
KANSAS CITY, MO.

It has been our aim to study the flora of this district—Kansas City, Mo., and the surrounding territory—to find out, if possible, which plants play the more important rôles in the causation of hay-fever, asthma and the dermatoses attributable to contact

Fig. 1.—Short ragweed (Ambrosia elatior), the most common pollinating weed of this district; it grows best in sunny places.

allergy. The botanic observations were made by one of us (O. C. D.) during a period of about eight years while collecting pollen. Notes were made each year relative to the abundance in growth of the different plants, the relative quantity of pollen produced by each, the nature of the pollen produced (whether light or heavy, dry, moist or oily), the dates of commencement and duration of the pollen season for each, and the dates during which pollen was produced in greatest quantity. In the clinical studies made by one of us (W. W. D.) during the same period, an effort was made by means of history, together with scratch, intra-

Fig. 2.—Leaf and blossom of short ragweed.

cutaneous, ophthalmic, nasal and therapeutic tests, to determine more directly the rôle played by each plant in the causation of allergy. In the early part of the study, few pollens were used. In the later years, however, our pollen collection was gradually increased so that during the last two years the pollen of some fifty plants, which appeared to be the most abundant pollen producers of the district, were used in testing. In our testing, extracts of all the more important pollens were used almost as a routine procedure, and during the last two years, extracts of the leaves of the plants were used as well.

In the making of a botanic survey, it appears evident at the outset that the flora of a given district varies from year to year according to weather conditions, not only in abundance of growth but also as to dates of pollination. The flora in different districts, of course, varies not only with geographic situation itself but also with altitude, climate, the seasons, rainfall, topography of the land, soil conditions, and conditions that result from cultivation and habitation. For this season, the following facts concerning this district are mentioned: Kansas City is an inland city of about 500,000 inhabitants, of 39 degrees north latitude, of between 700 and 800 feet altitude, and has a temperate climate with four seasons, and an average rainfall of 37½ inches a year. The topography of the land is hilly, with a small proportion of level bottom land, a rather small proportion of marshy land and very little natural prairie or sandy land. The soil is largely under cultivation and is, to a large extent, suitable for cultivation. In the city are many vacant lots covered with weeds.

Experience teaches that the plants chiefly responsible for pollen allergy are those which produce in greatest abundance a light, dry pollen which can be held in the air for a long period of time. Heavy pollen and oily pollen are not carried far in this way except on very windy days, and are therefore relatively unimportant.

30. Philip, C.: Arsenic Keratoses After Arsphenamin Injections, München. med. Wchnschr., 1915.
31. Hofmann, E.: Concerning Arsphenamin Exanthems, Dermat. Ztschr. **31**: 1, 1920.
32. Heller, J.: Further Communication as to the Occurrence of Severe Arsenical Melanosis and Hyperkeratosis After Combined Neo-Arsphenamin and Mercuric Salicylate Treatment, Arch. f. Dermat. u. Syph. **130**: 309, 1921; Berl. klin. Wchnschr. **46**, 1918.

For this reason, it is important in a botanic survey to discover all the plants that grow abundantly and produce in large quantities pollen of a kind that can be held in the air for a considerable period of time.

Fig. 3.—Giant ragweed (Ambrosia trifida): less common than short ragweed, but a more abundant pollinator; grows best in slightly moist and shady places.

Fig. 4.—Burweed marsh elder (Iva xanthifolia): less abundantly distributed than the two prominent members of the ragweed group; a good pollinator.

The amount of pollen in the air during a pollen season varies with certain weather conditions. Scheppegrell,[1] in his studies, found that on windy days the air at the height of the tallest buildings bore as much pollen as the air within a few feet of the ground. The quantity of pollen in the air varies not only with wind but also with other weather conditions. For instance, on cloudy days pollination of the plants carried into our greenhouses practically ceased, and cloudy weeks were associated with periods of marked relief for patients who were sufferers from hay-fever. When at the end of cloudy periods the sun came out brightly, pollination of the plants would be profuse and symptoms would recur in the patients who, during the cloudy weather just previous, had been almost well. Sunny, dry spells occasionally dry up the plants so that the pollen season is cut short just as effectively as it is by an early frost. Consequently, observations concerning the date of onset and duration of the pollen seasons vary somewhat from year to year. It may be mentioned, further, that the commencement of a pollen season does not correspond with the beginning of symptoms in hay-fever patients. Very often pollination antidates clinical hay-fever by two weeks or more. Symptoms commence apparently not at the beginning of the pollen season but at a time when pollen is produced and distributed in the air in great abundance.

Fig. 5.—Marsh elder (Iva ciliata): uncommon except in marshy land; a good pollinator.

Writers on this subject agree in dividing seasonal cases into three groups: The early spring cases, which occur coincident with pollination of the trees; the late spring and early summer cases, which occur with pollination of the grasses, and the fall cases, which accompany pollination of the weeds. In addition to this there are, of course, combined cases in which the patient is sensitive to two or more groups of flora and suffers over a more prolonged season. Also, persons sensitive to some of the earlier pollinators (such as lamb's quarters) may suffer over a prolonged season owing to the cutting followed by a second growth of some of the plants.

It is not possible in a paper of this scope to describe all the plants found in this district. The discussion must be restricted, for the sake of brevity, to the common producers of light pollen.

Of the trees, those which are numerous and rather generally distributed and produce pollen in quantity are box elder, sycamore, cottonwood, ash, hazelnut, black walnut, hickory and oak. Each pollinates for about three weeks in periods running between March and June. Most of them pollinate abundantly in the latter part of April and early part of May. The hazelnut tree is the first to pollinate, and black walnut is the latest. Trees that occur less generally are the tree of heaven, hard maple, silver poplar, hackberry, alder, birch, ironwood, Scotch pine, Austrian pine and chestnut. Any of the foregoing are possible sources of early spring hay-fever or asthma.

Of the grasses, the following are very generally distributed, grow luxuriantly and produce light pollen in abundance: rye, blue grass, timothy, slough grass and orchard grass. Their dates of pollination run from the

1. Scheppegrell, William: Hay-Fever and Asthma, Philadelphia, Lea & Febiger, 1922.

middle or latter part of May, through June, and include, as a rule, one or two weeks in July. Sudan grass and Johnson grass are not very abundant in this district, and produce a very heavy pollen. They pollinate, however, over a long period, running through the summer and fall months. The less common grasses are sorghum, forked beard grass, foxtail, millet, marsh grass, red top grass, wild rye, barnyard grass and Indian grass. The cultivated grains, such as wheat and corn, are relatively unimportant from the standpoint of pollen allergy, because of the facts that their pollen is either produced in relatively small quantity or is too heavy to be carried for any great distance by wind.

Of the weeds that pollinate during the fall months, the following are generally distributed, grow profusely and produce pollen in quantity: small ragweed, giant ragweed, marsh elder, cocklebur, the pigweeds, spiny Amaranth, water hemp, lamb's quarters, red sorrel,

Fig. 6.—Cocklebur (Xanthium commune), most common in fields and gardens recently cultivated; a good pollinator.

marsh marigold, hop, hemp, buckhorn and cattail. The small ragweed grows in greatest abundance. The giant ragweed is the greatest producer of pollen. These two weeds, as pollen producers, rank far ahead of other weeds in this district. Other weeds that are good pollinators but relatively scarce as compared with the foregoing are the southern ragweed, western ragweed, maple leaf goose foot, worm seed, cone flower, Russian thistle, spreading orache, red orache, firebush, dock, goldenrod, sunflower, yellow weed, wormwood, and castor bean. The dates of pollination run from the latter part of July until frost. The great majority do not pollinate abundantly before the first week in August. Practically the entire group pollinate during the latter part of August and through September. Pollen is produced most abundantly by the majority of the weeds in the latter week of August and through September, and during this period the great majority of the weeds mentioned pollinate profusely. Lamb's quarters, Sudan grass and Johnson grass differ from most plants in having a very long season. Each may run from June until frost, and in each case the date of pollination is affected by cutting. This is often fol-

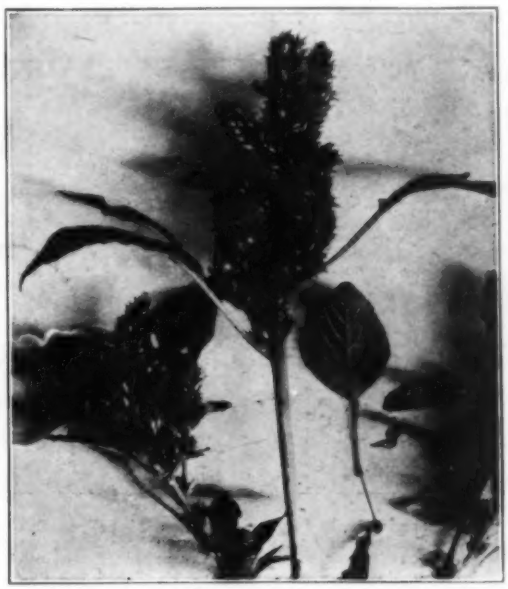

Fig. 7.—Pigweed (Amaranthus retroflexus), common in cultivated grounds; a fair pollinator.

lowed by a second growth and a second season of profuse pollination.

It becomes apparent from a comparison of botanic observations with the results of specific testing that plants which produce the greatest quantity of pollen over the longest season are the most important factors in the causation of illness. For example, it can be observed that the tree season is relatively short, that the number

Fig. 8.—Lamb's quarters (Chenopodium album), common in cultivated places; almost as common as ragweed, and pollinates profusely.

of trees is small as compared with the grasses and weeds, and that for this reason the quantity of pollen set free each year is not so great. In harmony with this, we find as a result of skin testing that persons sensitive to tree pollen are relatively rare.

It may be mentioned, further, that the grass season is longer than the tree season and that the growth of the grasses, though more profuse than that of the trees, is not so profuse as the weeds. The quantity of grass pollen set free each year, therefore, stands between that of the trees and that of the weeds. In harmony with this, it is found that grass cases are much more common than the tree cases, but not so common as the weed cases.

Fig. 9.—Greenhouses built for the collection of pollen: Plants are carried into the greenhouses and put in troughs containing water; the blossoms are allowed to hang over glazed paper; under the influence of sunlight and shaking, the pollen falls on the paper and can be collected in large amounts.

The fall weeds are the greatest of all pollinators. They are general in distribution, profuse in growth, and produce light pollen in quantity over a long season. In harmony with this, we find by specific tests that fall weeds are by far the most common sources of pollen allergy in this district and, further, that of the weeds the two ragweeds that are the greatest producers of pollen are the commonest sources of illness.

The illness in either of the foregoing groups of cases may be very severe while it lasts; in fact, the most intensely sensitive pollen case that we have observed was a tree case in which the patient actually gave a severe constitutional reaction which required epinephrin, after application of a small quantity of oak pollen to a scratch on the skin.

In the accompanying table are mentioned the plants of this district that are the more important producers of pollen, arranged chronologically according to their date of pollenization. Each plus mark represents one week in time. The more important producers of pollen are underlined, as are also the weeks at which their pollen is produced in greatest quantity. In the same table are given the results of skin tests obtained by a tabulation of 100 consecutive cases tested as a routine with all the

*The More Common Plants in Kansas City District Producing Dry, Light Pollen in Relative Abundance**

Popular Name	Habitat	Dates of Pollination								Percentage of Positive Skin Tests
		March	April	May	June	July	Aug.	Sept.	Oct.	
Hazelnut	Native woods	++	....	....	....	....	....	....	....	0
Cottonwood	General	....	++	....	....	....	....	....	....	0
Birch	Cultivated	....	++	....	....	....	....	....	....	0
Box elder	Native woods	....	++	....	....	....	....	....	....	0
Ironwood	Native woods	....	++	+	....	....	....	....	....	1
Oak	General woods	....	+	+++	....	....	....	....	....	1
Sycamore	Woods and yards	....	+	++	....	....	....	....	....	0
Ash	Woods and yards	....	+	+	....	....	....	....	....	0
Hickory	Native woods	....	....	+++	....	....	....	....	....	1
Black walnut	Native woods	....	....	++++	+	....	....	....	....	0
Red sorrel	Pastures, meadows	....	....	+++	++++	....	....	....	....	0
Rye	Cultivated crop	....	....	++	+	....	....	....	....	10
Dock	Wastes	....	....	++	++++	....	....	....	....	..
Blue grass	Lawns, pastures	....	....	++	++++	....	....	....	....	6
Orchard grass	Lawns, meadows	....	....	+	++++	....	....	....	....	6
Lamb's quarters	Gardens, wastes	....	....	....	++++	++++	++++	++++	+++	15
Timothy	Cultivated, roadsides	....	....	....	++++	++	....	....	....	15
Buckhorn	Lawns	....	....	+	++++	+++	....	....	....	2
Slough grass	Moist wastes	....	....	....	++++	....	....	....	....	14
Spiny amaranth	Stock lots	....	....	....	....	++	++++	++++	++++	..
Water hemp	Moist places	....	....	....	....	++	++++	++	....	3
Hemp	Wastes	....	....	....	....	+	++++	++++	++++	10
Giant ragweed	Moist soil; roadsides	....	....	....	....	....	++++	++++	++++	42
Pigweed	Gardens	....	....	....	....	....	++++	+	....	30
Slender pigweed	Gardens	....	....	....	....	....	++++	++++	++	3
Hop	Wastes	....	....	....	....	....	++++	++++	++++	..
Cocklebur	Wastes	....	....	....	....	....	++	+++	....	40
Short ragweed	General, especially in sunny, dry places	....	....	....	....	....	++	++++	....	70
Roadweed	Rocky soil	....	....	....	....	....	+	+	....	40
Western ragweed	Wastes	....	....	....	....	....	++	+++	....	..
Tall red top grass	Lawns, fields	....	....	....	....	....	++	++	....	..
Marsh elder	Moist places	....	....	....	....	....	+	++	....	21
Burweed marsh elder	Wastes	....	....	....	....	....	+	++++	....	..
Marsh marigold	Moist ground	....	....	....	....	....	....	++++	+	15
Wormwood	Native prairie	....	....	....	....	....	....	+++	....	15

* They are arranged chronologically according to dates of pollination with mention of their natural habitat and the percentage of pollen cases that gave positive tests to extracts of each pollen. The more important are underlined. Each plus mark represents one week. The weeks during which pollination is most profuse are underlined. The less important plants are not included in this table. Of the cases which reacted to pollen, 45 per cent. showed skin sensitiveness to other allergens in the following ratios: meats, 7 per cent.; eggs and dairy foods, 10; fowl, 0; vegetables, 45; fruits, 20; fish, 2; nuts, 7; condiments, 5; grains, 30; animal danders, 30; bacteria, 18; fur, 0; dusts, 10; shavings (wood), 0; extracts of weeds, 5.

pollens mentioned. The majority of the tests were made by injecting intracutaneously 0.01 c.c. of a solution containing 0.01 mg. of pollen to a cubic centimeter. Reactions were called positive when there was an immediate appearance of a hive with pseudopods. Small reactions without pseudopods were called negative. The results of the ophthalmic, nasal, constitutional and therapeutic tests were not included in this table because these tests could not be carried out as a routine measure with all the pollens. The latter tests were made only with the pollen solutions which gave the stronger skin reactions or which were suspected for other reasons as causes of illness.

The great majority of patients show skin sensitiveness to a large number of pollens, often to each member of certain groups of pollens. As a general rule, the pollen that gives the strongest skin test is the one that gives a positive conjunctival test when sprayed into the eye in a dilution of 1 : 1,000. The other pollens, which give less intensive skin tests, usually give negative conjunctival tests. The pollens that have given positive conjunctival tests have usually been the ones we thought

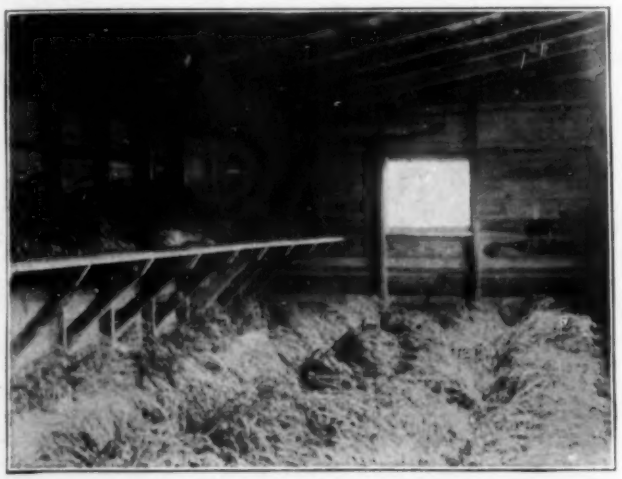

Fig. 10.—Plants in troughs in greenhouses: One house full of Ambrosia trifida collected from an area of scarcely 400 square feet yielded 200 gm. (over 1 pint in volume) of pollen in three days; this illustrates how great is the quantity of pollen liberated into the air at the height of the season on windy, sunny days.

responsible for symptoms, and for this reason were soon chosen for therapy. Usually, therapy with these pollens (from one to four in number) gave complete clinical relief.

The foregoing statements are subject to marked exception. Occasionally it seemed that when patients were sensitive to a number of pollens they were made ill, not by any individual member of the group but rather by the combined action of several or all of them. Furthermore, some patients who gave flatly negative conjunctival tests to each individual member of the group of pollens to which they gave strong positive skin tests occasionally reacted strongly when a mixture of the pollens was sprayed into the conjunctival sac or nose. We observed several instances in which the patient was actually made ill by exposure to pollen of air which did not include the one pollen to which they reacted most markedly when tested by skin and conjunctival tests. For example, last season a few patients, sensitive chiefly to *Ambrosia elatior*, continued to have hay-fever after *Ambrosia elatior* had ceased pollinating, on account of a spell of sunny, dry weather which apparently burned it up. The symptoms in these patients must have been kept going by other pollens to which they were less sensitive than to *Ambrosia elatior*.

Specificity is an interesting and marked characteristic of sensitiveness to pollen. Patients sensitive to ragweed in one locality may be unaffected by ragweed pollen in other districts. At the same time, specificity

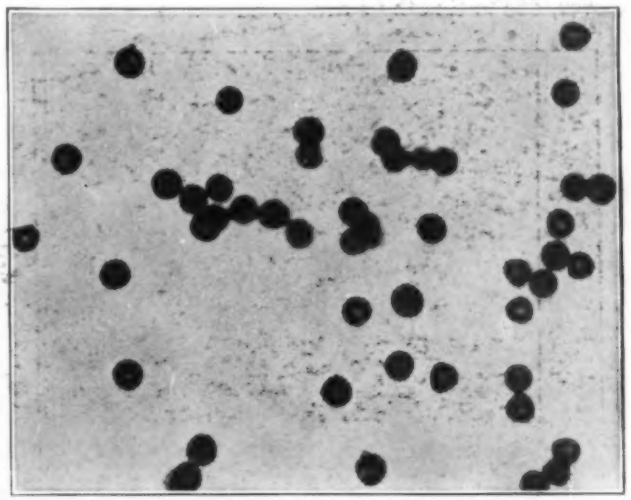

Fig. 11.—Small, speculated pollen granules; large ragweed; the type of all the ragweed pollens.

in some cases seems to be largely a matter of degree of sensitiveness. That is, the pollen which causes the patient to have hay-fever is not necessarily the pollen to which he is most sensitive but the one which he gets in greatest dosage. In other words, symptoms seem to be the result of a mean between degree of sensitiveness and dose of pollen encountered.

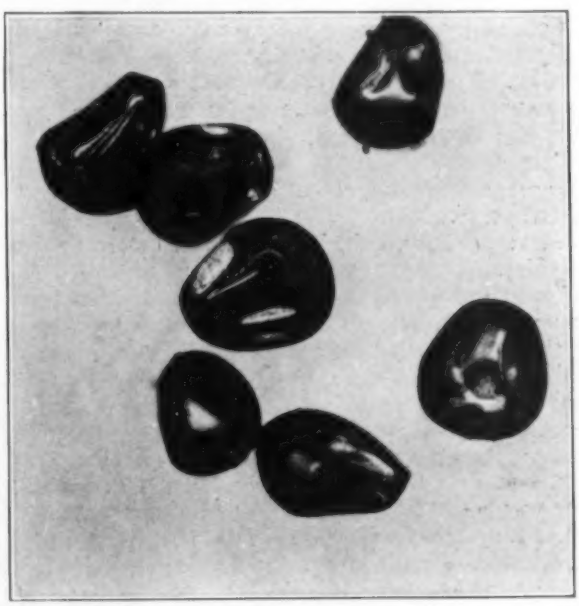

Fig. 12.—Very large, smooth pollen granules; corn; same magnification as Figure 11; a type of grass pollen.

It is interesting to mention at this point that, of the patients who were clinically sensitive to pollen, 45 per cent. reacted positively to some other substance, either vegetable, fruit, grain, sea food or animal dander.

It is interesting, also, to mention that a very few patients who were sensitive to pollen reacted also to

some other part of a plant, either of the same or of a different family. For example, one patient sensitive to oak pollen reacted markedly to oak tree juice. One *Ambrosia elatior* pollen patient reacted both by skin test and by inhalation test to an extract of the leaves of blue grass but not to blue grass pollen; several reacted to extracts from the leaves or blossoms of white or red clover, one to timothy extract, and one to straw.

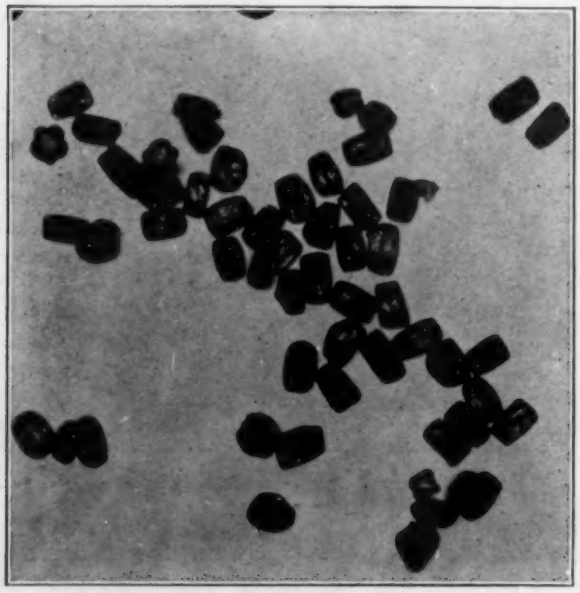

Fig. 13.—Medium sized pollen granules; ash; same magnification as Figure 11; a type of free pollen.

SUMMARY

By reviewing the table, one can see that the following plants are the greatest producers of light pollen in this district, and would seem, therefore, from a botanic standpoint, to be the more important agents in the causation of pollen allergy. They are given in the order of their relative importance:

Weeds: Short ragweed, giant ragweed, marsh elder, cocklebur, lamb's quarters and *Acnida.*

Grasses: Timothy, blue grass, slough grass and orchard grass.

Trees: Hickory, oak, black walnut, cottonwood and box elder.

It is interesting to note how closely the botanic data harmonize with the results obtained by specific testing. Of the pollen-sensitive patients, by far the greatest number were sensitive to the light pollens set free in the air in the greatest abundance over the longest period of time; first and foremost, to short ragweed; secondly, to giant ragweed, and less often to cocklebur, marsh elder, lamb's quarters, wormwood and *Acnida.* The latter weeds showed relatively large percentages so far as skin tests were concerned; but not nearly so great a proportion as this gave positive conjunctival tests, and we believed that patients were not so often made ill by these pollens in the amounts encountered naturally as the skin tests would indicate. The spring grasses, with their shorter season and smaller ratio of pollen production, did not compare in number of sensitive cases with fall weeds. Finally, the trees with their relatively short season and comparative scarcity were responsible for very few cases. In fact, we did not observe a sufficient number of tree cases to permit the drawing up of substantial statistics. So few patients were found sensitive to flowering plants and cultivated grains that these cases were put down as curiosities. It seemed quite clear that the principal offenders, both in number of cases and in the duration and severity of illness produced, were the weeds which produce the greatest quantity of pollen over the longest period of time.

Given a patient who inherits a constitution which permits him to become sensitive to pollen, he is most likely to react clinically to the one to which he is most intensely and most constantly exposed.

Federal Reserve Bank Building.

AMBIDEXTROUS PERCUSSION AND PALPATION *

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Percussion, as practiced by the best physicians, is probably applied less correctly than any other method of physical examination.

In any hospital we can observe clinicians percussing with two or more blows, when only one should be made; comparing the note elicited between ribs with that on the other side of the chest elicited with the pleximeter finger crossing ribs; placing themselves incorrectly to compare the reflected axial sound waves of the two sides, and in several other ways failing to obtain exact results. An awkwardness is also revealed not unlike that of Vulcan or of the blacksmith's son, Demosthenes, before he removed the distortion that accompanied his utterance, by watching his motions in a looking glass.

In 1761, Leopold Auenbrugger,[1] after seven years of careful study, published his famous work and gave the name to and described the method and results of percussion.

As Laënnec was led to the invention of the stethoscope by watching children in the gardens of the

Fig. 1.—Percussion of patient's left chest with examiner's second right finger as hammer; examiner's left pleximeter finger exerts firm pressure; all other fingers are lifted from chest wall.

Louvre listening to the transmission of sounds along pieces of wood, so, as Neuburger [1] has pointed out, Auenbrugger, the son of an innkeeper, probably tapped on kegs to ascertain the level of the wine content.

In a modest preface to his work, Auenbrugger writes: "I think it necessary candidly to confess that

* Abstract from a clinical lecture on Percussion and Palpation of the Normal Chest at the Colorado School of Tuberculosis, 1923.

1. Auenbrugger, Leopold: Inventum Novum ex Percussione Thoracis Humani ut Signo Abstrusos Interni Pectoris Morbos Detegendi, republished by Max Neuburger, Vienna, Josef Safár, 1922.

there still remain many defects to be remedied by careful observation and experience."

As is well known, Auenbrugger advocated immediate percussion; in his own words, "The thorax ought to be struck, slowly and gently, with the points of the fingers, brought close together and at the same time extended." And again: "The shirt is to be drawn tight over the chest or the hand of the operator covered with a glove made of unpolished leather. If the naked chest is struck with the naked hand, the contact of the polished surfaces produces a kind of noise which alters or obscures the natural character of the sound."

Fig. 2.—Percussion of patient's right chest with examiner's second left finger as hammer; examiner's right pleximeter finger exerts firm pressure; all other fingers are lifted from chest wall.

Trousseau pointed out that, in view of the foregoing directions, Auenbrugger actually practiced mediate percussion, with the shirt material or the glove acting somewhat as a pleximeter.

Seldom de we see today the use of immediate percussion, yet Geigel[2] writes: "One can orient himself well as to the air-content of the whole apex of a man, not too fat, by one blow over the clavicle and, over the back, immediate percussion of the lower lobes reveals by one blow on right and left a difference in the air-content; for example, a beginning hypostasis, not always so easily demonstrated by mediate percussion." Such percussion can, of course, be easily applied by either hand.

Percussion hammers and pleximeter plates are now rarely employed by physicians. The second finger of the left hand is now the pleximeter, and the second finger of the right hand is used as the hammer. Such is the method always taught in our medical schools.

For many years I have advocated not only that percussion should be bimanual, but also that physicians should teach and practice ambidextrous percussion. Medical men who are also musicians are easily able to employ the second finger of the left hand as a percussion hammer. The present generation, however, is quite skilled in the use of the typewriter, in which the left fingers are practiced equally with the right. There can be little doubt that this skill should be translated to medical students for the art of percussion.

With the physician seated or standing directly in front of the patient, the pleximeter finger of the right hand should be firmly applied, so that a blanched impression remains after its removal, over each intercostal space of the right side of the patient's chest. Examination should proceed from below upward. The right border of the heart can be determined at this time. The second finger of the left hand is used, therefore, for the percussion blow on the patient's right side.

In percussion of the left chest, the examiner's left second finger is the pleximeter and the right second finger is the hammer. When the examiner's hands arrive at the upper part of the chest, ambidextrous thumb palpation of the trachea can be quickly made, as described in a previous publication.[3]

It will be easily noted how well the pleximeter fingers fit the intercostal spaces when so applied. The sounds of the two sides can be better compared.

The same rule holds for percussion of the back of the patient's chest; and, when the upper part is reached, ambidextrous palpation can be made of the cervical nodes. Enlargements of these nodes are best detected with the examiner behind the patient.

By the ordinary methods of percussion, students are instructed to twist the left hand like an elevator dial, so that the usual left pleximeter finger should better fit the right intercostal spaces. This, however, is exceedingly awkward in application.

The pleximeter finger alone should touch the chest, all other fingers being lifted, so that the tones will not be dampened. This technic, so important, is rarely seen.

The accompanying illustrations will serve to explain ambidextrous percussion.

With bed patients, the value of ambidextrous percussion is self evident, the method greatly reducing the difficulties of the examiner in many more or less inaccessible parts.

Vocal fremitus is obtained by firm application of the backs of the fingers, vibration being transmitted better through the bones than through the soft parts. The backs of the right fingers are applied to the back of the patient's right side, and vice versa. It must be remembered that, on account of voice pitch, vocal fremitus is not usually obtained over the bases in women and children.

402 Burns Building.

2. Geigel: Leitfaden der diagnostischen Akustik, 1908.

CHRONIC SCLEROSING OSTEITIS *

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ROCHESTER, MINN.

Localized proliferative chronic nonsuppurative sclerosing osteitis is revealed in the roentgenogram by a spindle-shaped thickening of the bone. The medullary cavity is reduced in size, and the bone is increased in density. The pain is a deep aching, usually worse at night and on exertion. The lower extremity is more often involved; there is local swelling, local heat, and often tenderness on deep pressure. The condition is sufficiently rare to confuse even surgeons of wide experience.

The literature on the subject is not abundant. Gosselin,[1] in 1868, gave a good description of the condition. Cheyne,[2] in 1890, described a case of osteitis in the radius in which, at operation, a sequestrum was removed without a trace of pus being encountered. Kluppel,[1] in 1879, recorded the condition in the femur

3. Webb, G. B.; Forster, A. M., and Gilbert, G. B.: Trachea Position, J. A. M. A. **65**: 1017 (Sept. 18) 1915.

* From the Section on Orthopedic Surgery, Mayo Clinic.
* Read before the Western Surgical Association, Colorado Springs, Colo., Dec. 6, 1923.

1. Quoted by Jones (Footnote 4).
2. Cheyne, W. W.: Central Necrosis of the Radius Without Suppuration, Tr. Path. Soc. London **41**: 249-252, 1890.

of a boy, aged 12 years. Garré's [3] classical description appeared in 1893, after which the condition was known as the osteomyelitis of Garré. Jones [4] and Bloodgood,[5] in 1921, discussed the subject, and Kurtz [6] reported a case of the tibia in 1922. He believes that a preceding, long continued tonsillar infection was the etiologic factor in his case. Our standard textbooks give no space to the subject.

Fig. 1.—Chronic sclerosing nonsuppurative osteitis of the tibia.

ETIOLOGY AND PATHOLOGY

It is generally accepted that an infectious process is the cause of chronic sclerosing osteitis; a history of pneumonia, influenza, typhoid fever or other infectious disease may precede the onset. The pathologic findings are characterized by an increase in the diameter of the bone in a circumscribed area, by a thickening and eburnation of the cortex and a distinct narrowing of the medullary cavity (Fig. 1). In a few cases in the clinic the medullary cavity has been completely obliterated. Sections of the eburnated bone when placed under the microscope show the lacunae to be overactive in the production of bone; the abundance causes an ivory-like formation in the area involved, the blood vessels are choked off, and the vascularity of the medulla reduced by the encroachment on all sides of the enlarged and thickened cortex. The periosteum is thickened to a varying degree.

Typical chronic sclerosing proliferative nonsuppurative osteomyelitis, as the name implies, does not suppurate, but the condition that is typical today may result in pus formation, usually without sequestration. In such cases the roentgen-ray findings are indistinguishable from those of the nonsuppurative type, and they can be differentiated only by the clinical history of suppuration, and the scar. At the onset there may be considerable swelling of the soft tissues, with venous enlargement and local heat. As this subsides without suppuration, only the bony enlargement remains. The bone may actually be increased in length. In Trendel's [7] series of 1,299 cases of osteomyelitis, there were fifty-four (4 per cent.) of sclerosing osteomyelitis. The thirty cases in this series were gathered from a group of 1,968 cases of osteomyelitis, or a percentage of approximately 1.5. Klemm [8] mentions four groups: (1) without suppuration and without necrosis, (2) with suppuration, (3) with necrosis, and (4) with a diffuse cicatricial thickening of the periosteum and soft parts and "brain matter-like" deposits in the scar tissue. From a clinical point of view, the classification seems very satisfactory except in the fourth group; I have not encountered cases of this type.

3. Garré, C.: Ueber besondere Formen und Folgezustände der akuten infektiosen Osteomyelitis, Beitr. z. klin. Chir. **10**: 241-298, 1893.
4. Jones, S. F.: Sclerosing Nonsuppurative Osteomyelitis as Described by Garré: Report of Case, with Roentgenographic and Pathologic Findings and Review of the Literature, J. A. M. A. **77**: 986-990 (Sept. 24) 1921.
5. Bloodgood, J. C.: Bone Diseases; Nonsuppurating Osteomyelitis (Garré), Infectious Ossifying Periostitis, J. Radiol. **3**: 310-317 (Aug.) 1922.
6. Kurtz, A. D.: Chronic Sclerosing Osteomyelitis: Report of a Case, J. A. M. A. **78**: 331-333 (Feb. 4) 1922.
7. Trendel: Beiträge zur Kenntnis der akuten infektiosen Osteomyelitis und ihrer Folgeerscheinungen, Beitr. z. klin. Chir. **41**: 607-675, 1904.
8. Klemm, P.: Ueber die chronische Form der sklerosierenden Osteomyelitis und ihrer Varianten, Beitr. z. klin. Chir. **80**: 54-72, 1912.

SYMPTOMS

Usually the condition has been present for some time before the patient is seen by a consultant. Occasionally the onset is acute and sudden with high fever and leukocytosis, as in cases of suppurative osteomyelitis, but more often it is subacute or chronic. In cases of acute onset, suppuration may ensue. The pain is characterized as boring and deep, and worse on exertion and at night. The majority of patients are males, and usually under 30 years. A history of traumatic injury months or years before may be obtained, and a recent history of acute illness, such as influenza or typhoid fever. Examination will disclose an enlargement, but the wasting of the muscles may be so great that there is actual atrophy of the limb. However, bony thickening is quite distinct on palpation, and is confirmed by the roentgenogram. In the typical case, as of the tibia, the roentgen-ray findings are characteristic. As I have said, there is the spindle-shaped enlargement in the shaft, well away from the epiphysis, a distinct thickening of the cortex with a smooth periosteal covering, and a narrowing of the medullary cavity; tenderness is usually complained of on deep pressure.

Fig. 2.—Syphilis involving the tibial tubercle and upper end of the shaft.

The course of the disease is chronic and long. Recurrences, even after relief has been afforded by operation, are not infrequent; two such patients are still under observation at the clinic.

Of the thirty cases observed in the Mayo Clinic, the tibia was involved in sixteen, the femur in ten, the

fibula in two, the ulna in one, and the second metacarpal in one. Nineteen patients were males, and eleven were females. Twenty-two were under 30 years. The ages are distributed in decades as follows: 0 to 10, two; 11 to 20, eight; 21 to 30, twelve; 31 to 40, three; 41 to 50, three; 51 to 60, two. The condition had persisted for from one-half year to twenty-five years, with an

Fig. 3.—Typical raylike appearance of sarcoma of the femur.

average of six years. Trauma might reasonably have been considered a factor in seven, and infectious diseases in eight. Serologic tests for syphilis and many provocative tests were made, with negative results in all but one. This case will be mentioned later. In eight, either previous or subsequent to our examination, there was suppuration, but in only one case a history of necrosis of bone. All the patients had pain; in the majority it was graded 2 on a basis of 1 to 4. Thirteen patients were not operated on; conservative measures, such as the application of heat, and diluted mercurial ointment, were carried out. Three were relieved permanently; one was relieved, but had a recurrence; nine were not traced. Seventeen patients were operated on, the operation consisting either of "guttering" the bone by chiseling off the cortex, or drilling multiple holes through both cortices. In both procedures the object was to get a better blood supply into the hard eburnated bone and to the medulla. Nine patients are known to have been relieved; one was not relieved; two were relieved temporarily but symptoms recurred, and five were not traced.

DIFFERENTIAL DIAGNOSIS

Syphilis, sarcoma, Paget's disease and osteitis fibrosis cystica offer the greatest difficulties in the differential diagnosis. A hasty diagnosis may condemn a person to lifelong dread of syphilis, or it may lead to the amputation of a limb. One of our cases was unusual in that the symptoms in the tibia had been present three years before the infection with syphilis. The fact that the patient was somewhat relieved by treatment for syphilis does not, by any means, indicate that the condition being dealt with was not typical sclerosing osteitis. Syphilitic lesions are also proliferative, with thickening of the periosteum and increased cortex. In the roentgenogram there may be a sort of mottling, due to gummatous degeneration, but this may be entirely absent. The medullary cavity may be narrowed, as occurs in typical sclerosing osteitis. The typical spindle-shaped tumor is usually lacking, syphilitic osteitis being more prone to cause an irregular tumor, thicker on one side than on the other (Fig. 2). The extremely young patient is less likely to be syphilitic, and the elderly patient may be viewed with less suspicion than the one in the so-called venereal age, from 20 to 40. Thorough general and neurologic examinations, with the necessary

Fig. 4.—Sclerosing sarcoma of the upper end of the tibia.

Differential Diagnosis: Chronic Sclerosing Osteitis

	Sex	Age, Years	Infectious Etiology	Trauma	Suppuration	Duration	Pain and Tenderness	Fever and Leukocytosis	Enlarged Veins	Roentgen Ray	Site
Sclerosing osteitis	Males	30	Yes	Infrequent	Occasional	Long	Yes	May be present	Seldom	Proliferating	Shaft from epiphysis
Sarcoma, early stage	Males, except children	Any age	No	Frequent	None	Short	None, early	Later	Often	Destructive	Epiphysis
Syphilis	Males	20 to 40	No	Occasional	None	Long	Yes	None	None	Proliferating	Shaft or epiphysis
Paget's disease	Males	45+	No	No	None	Long	Yes	None	Varicose	Proliferating	Entire shaft

serologic tests, should be insisted on in doubtful cases, and also the opinion of the syphilographer.

Pain may be absent in cases of syphilitic osteitis; but, when present, it may be similar to that in cases of sclerosing osteitis, though rarely as severe. Not infrequently the tumor or swelling will precede the pain and discomfort, and bony lesions are likely to be multiple.

Fig. 5.—Osteitis fibrosis cystica of the tibia.

Sarcoma occurs at all ages, and in the early stages may be difficult to differentiate. It is often preceded by a history of injury, and the lesion is likely to be nearer the ends of the bone. Pain is not as severe as in cases of sclerosing osteitis; elevation of the temperature, and leukocytosis are more rare. The duration of the complaint is, as a rule, much shorter than in cases of osteitis. Enlarged veins in the skin are usual with sarcoma, but they are also occasionally seen in the more painful and subacute cases of sclerosing osteitis. Soft-tissue swelling is more common than with osteitis. The roentgen ray is important in the diagnosis, and anything approaching a typical picture of sclerosing osteitis in proved cases of sarcoma is rare (Fig. 3). The process is more destructive in character, and increased density is seen only in the sclerosing type of osteosarcoma (Fig. 4). The smooth periosteal outline is lacking, there being a certain furry appearance at the edge of the tumor. After all is said, however, it is not always possible to make a definite diagnosis, and in uncertain cases exploration and microscopic examination of the tissue should be made without loss of time.

It is not difficult to differentiate osteitis fibrosis cystica of the diffuse type with multiple bone involvement, but when the condition is localized to one bone it is not so simple. The lesion is in the shaft of the long bones, but is rather that of rarefaction than sclerosis, and the roentgenogram shows the small cystic formation (Fig. 5).

Paget's osteitis deformans may affect only the tibia, and never extend beyond that bone, but the onset late in life with bowing and deformity is typical. The roentgenogram shows the eburnation, often with a coarse, longitudinal streaking, and the entire shaft is involved (Fig. 6). The pain may become very annoying, and cause as much disability as in the type of osteitis under discussion. When there is typical enlargement of the head, and loss of stature, the diagnosis is made without difficulty.

A certain type of rarefying nonsuppurative osteomyelitis may lead to a pathologic fracture before suppuration occurs, if in fact it occurs at all. The condition is more likely to be found in elderly patients, in whom the destruction is so extreme that it will not be confused with sclerosing osteitis; however, on several occasions I have known it to be diagnosed as metastatic carcinoma.

Carcinoma is essentially a destructive process. The rarefaction and marked destruction, with the greater age of the patient, and the usually evident primary lesion, preclude any confusion with sclerosing osteitis.

TREATMENT

Treatment is usually surgical, although essentially conservative. The practice of resecting the involved area, or amputating, is to be condemned. Two procedures have been used in the clinic, gutting of the bone, and trephining with multiple drill holes, the latter

Fig. 6.—Paget's disease affecting the tibia.

extending through both cortices. Relief is brought about by the improved circulatory condition, the pain probably being caused by the inability of the blood to flow through this dense bone. Some of the patients in the series failed to obtain relief by the gutting, and were relieved by trephining, while the opposite has been true of others. All foci of infection, such as bad ton-

sils or septic teeth, should be eliminated. As I have said, in some instances all methods of treatment are apparently of no avail.

SUMMARY

Chronic proliferative sclerosing osteitis is a definite clinical entity, probably a low grade infectious process.

It is sometimes difficult to differentiate from syphilitic osteitis, sarcoma, Paget's disease, and occasionally osteitis fibrosis cystica. It is usually relieved by gutting the bone, or trephining, but is quite likely to recur, and in some instances seems to persist in spite of all measures of treatment.

NECROPSY PERCENTAGE IN RELATION TO HOSPITAL EFFICIENCY *

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"Necropsy percentage" means the percentage of deaths in which a necropsy is made, and "hospital efficiency" means the efficiency with which a hospital carries on its primary functions; namely, caring for patients and promoting the growth and diffusion as well as the use of medical knowledge. Obviously, the significance of necropsy percentage in relation to efficiency will depend on the actual value the necropsy has today.

INFLUENCE OF NECROPSY ON MEDICAL PROGRESS

The value to medical progress of the necropsy stands forth clearly in medical history. By substituting observation for speculation, it was a potent means in driving dogma and fantasy out of medicine. In bringing to light the relation of structural changes to the clinical phenomena, it increased vastly the knowledge and understanding of disease, aided directly in the identification of diseases, and constituted the basis of physical diagnosis. It was the forerunner of the science of morbid anatomy, and became a faithful and indispensable handmaid to investigation and practice in all departments of medicine.

It is difficult to speculate reasonably on what the state of medical knowledge and practice might be at this moment in case necropsies had not been made. In 1761, Morgagni published his great work on "The Seats and Causes of Diseases Investigated by Anatomy," and it is only since then that postmortem examination has been made in a thorough manner on a large scale, and it is more recent still that it became established everywhere as an invaluable method for the study of diseases and injuries and for the control of diagnosis and treatment.

There are, of course, many and interesting indications that the value of the necropsy was understood much earlier than the time just stated.

Francis Bacon (1561-1626) and van Helmont the physician (1577-1644) urged that postmortem examinations be made.[1] Little by little the keen interest in morbid anatomy of William Harvey (1578-1657) has been brought to light. Like a true pathologist, he said that more can be learned from the dissection of the body of one dead from a chronic malady like consumption than from the bodies of ten criminals. In an unpublished manuscript on medical anatomy or anatomy in relation to medicine, now lost, Harvey (so he says in a letter to John Riolan, Jr.) desired "to relate from the many dissections of persons, diseased, worn out by serious and strange affections, how and in what way the internal organs were changed in their situation, size, structure, figure, consistency, and other sensible qualities from their natural forms and appearances and in what various and remarkable ways they were affected." [2] This passage reveals that Harvey was one of that small but select band of physicians who faithfully follow their patients to the postmortem room.

Glisson, too (1597-1677), was familiar with the idea of systematically comparing the organs in a series of bodies in order to find the lesions that invariably accompany a certain train of symptoms.[1]

THE NECROPSY TODAY

But what of the necropsy today? I shall discuss briefly the value of the necropsy to medical investigation, to medical education, to the physician, and to the community.[3] These interests are so related that whatever helps one helps at the same time all the others.

THE NECROPSY IN INVESTIGATION

Sometimes one hears the flimsy remark that the field of the human necropsy has been worked over so thoroughly that there is nothing left to discover by this simple means. Even if the structural characteristics of all human diseases, injuries and anomalies were to be known and explained, the necropsy still would be essential in working out new methods of observation, of diagnosis, of treatment. In science, the explanation of one phenomenon "only uncovers new phenomena behind it that still demand explanation, in endless succession," and the day when the necropsy will not be needed in medical investigation is far, far away.

The necropsy has been belittled, too, because it reveals largely so-called terminal pathologic conditions. "Nothing is more folish," said Celsus, "than to think that a man has been so in his life-time as he is found when he is dying or already dead"; and yet who will assert that the postmortem room is not a good place to study fully the earlier, even the earliest, stages of morbid processes as well as the later results?

Always the necropsy will be a strong aid to investigation by contributing materials, not otherwise easy to get, for study by anatomic, bacteriologic, chemical or other methods.

Frequently, conditions observed post mortem, by suggesting definite problems or methods of attack, become the starting point of important work. The necropsy opens secret chambers for the investigator to which there is no other key.

Finally, let it not be forgotten that the necropsy is a means to the study of the experiments made by nature everywhere with wonderful skill and ingenuity. It is shortsighted not to use such rich opportunities to learn.

THE NECROPSY IN EDUCATION

That the necropsy is essential to the study of medicine will not be disputed. It is the only means by

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* Read before the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, Chicago, March 5, 1924.

1. Chiari, H.: Geschichte der pathologischen Anatomie des Menschen, in Neuburger and Pagel: Handbuch der Geschichte des Medizin **2**: 473, 1903.

2. Barlow, Thomas: Lancet **2**: 742 (Oct. 28) 1916.

3. Report on Postmortem examinations in the United States by a committee of the New York Academy of Medicine: Oertel, Horst: The Past and Present Position of the Autopsy in Medical Education and Practice, J. A. M. A. **60**: 1784 (June 7) 1913. Wilson, L. B.: The Necropsy as a Public Service, J. A. M. A. **64**: 1560 (May 8) 1915. Winternitz, M. C.: Rôle of Autopsy in Medicine Today, Johns Hopkins Hosp. Rep. **18**: 103, 1917.

which objective, first-hand knowledge of the internal changes caused by disease and injury can be obtained. Without this knowledge, a rational general conception of the nature and course of disease cannot be acquired, and the true purpose and scope of diagnosis, of treatment, and of prognosis understood clearly.

THE NECROPSY AND THE PHYSICIAN

By comparing the conditions disclosed at necropsy with the phenomena observed during life, the physician controls his diagnosis and treatment, answers questions that arise, stimulates his interest in rational medicine, revives and expands his objective knowledge of disease, and increases the value of his services to the public.

Without the educative stimulus of the necropsy, the mental picture of the changes at the seats of disease tends to become vague and shadowy, and the conception of the relation of these changes to the clinical manifestations tends to become imaginary rather than objective and real. The way the hospital staff thinks about necropsies is of real practical concern, because it affects the professional conduct and efficiency of every member.

THE NECROPSY AND THE PUBLIC

In the degree in which the necropsy serves investigation and medical education, of student as well as physician, it also serves the public, which is the ultimate and chief beneficiary. But the necropsy serves the public also in special ways, notably as a means to determine the cause of death and to secure reliable data for the family history and statistics.

Necropsy and Cause of Death.—The necropsy is indispensable in all cases in which it is necessary to determine as fully as may be the cause of death. Here nothing can take its place. For this reason, law and custom sweep aside all objections when a necropsy is indicated for legal purposes. In medicolegal work, the highest standards of completeness of examination and of reliability of observation are demanded because, in the effort to determine the causation of death, it is essential that no potential factor be overlooked or neglected. Frequently, the necropsy is of great value in showing conclusively that certain conditions, whether suspected or not, are not present in a given case.

Unfortunately, medicolegal necropsies not uncommonly are or have to be entrusted to inexperienced physicians whose work is incomplete and untrustworthy. The lack in most smaller cities of physicians competent to make a thorough and complete necropsy according to standard methods is, I believe, intimately connected with the lack of active interest in this kind of work on the part of most of our hospitals. I hold that in the nature of its functions the hospital should be a center for necropsies, and that if it fails to maintain interest and develop skill in necropsies, it also fails in a service it owes the public.

At this point it may be in order to say that the omission of a necropsy in the case of notable persons is regrettable for two reasons: (1) the loss of the influence that a necropsy in such a case will have on public opinion in regard to necropsies, and (2) the failure to use the best method available to determine the cause of death in historical personages.

The Necropsy and Statistics.—For various reasons, the clinical diagnosis is subject to a not inconsiderable percentage of error.[4] This is one reason why statistics may be faulty,[5] and why questions of great interest, as for instance whether cancer is on the increase, cannot be answered definitely.[6] The study of problems of heredity in disease suffers for the same reason. The principal remedy for these shortcomings is more and more thorough necropsies, and much more use than is now made of postmortem diagnosis in statistics.

The Necropsy and the Family.—The great value to the family of accurate knowledge of the diseases and weaknesses of its members needs no elaboration. A most important but too much neglected source of such knowledge is the necropsy. In connection with this phase of the necropsy we should not overlook the fact that the main clinical diagnosis in a given case may be quite correct and yet the necropsy frequently discloses important associated conditions and lesions that otherwise would escape observation. Requests for a necropsy presented from the point of view of the family as here indicated seem to me to carry, as a rule, a special appeal to intelligent persons, and a special effort should be made always to report the results clearly and fully to those concerned.

NECROPSY PERCENTAGE AND EFFICIENCY

Now, if the necropsy is essential for investigation, essential for the increase of medical knowledge, essential for the education of the medical student and intern, essential for the continuing education of the physician, and of great value to society in other ways as well, it follows directly and inevitably that the hospital which neglects the necropsy thereby limits its usefulness. Consequently, no words need be wasted in argument in favor of the proposition that necropsy percentage is an index of hospital efficiency.

It is well known that necropsies are rare occurrences indeed in many American hospitals. It is even true that, in a large proportion of our hospitals, a necropsy percentage cannot be said to exist. In 1913, only four of seventeen large representative hospitals reported a percentage over 25.[7] No doubt, conditions have changed for the better since then; but, so far as I know, there is only one city in which a serious attempt is being made to record the necropsy percentage of its hospitals from year to year, and that is Chicago. Here the Institute of Medicine maintains a special committee on necropsies in Chicago hospitals, which has published detailed reports for each year, beginning with 1919.[8] It is of great interest to note that in 1922 the percentage of permission necropsies was 20.8 for about forty hospitals, which is an increase of 75 per cent. in three years. In fourteen of these hospitals, the permission percentage was over 20, the three hospitals standing highest having 71.6, 62.1 and 47.7, respectively. (It is only in a very small number of our hospitals that the necropsy percentage reaches 80, 90 or over.) In twelve of the Chicago hospitals, a weekly pathologic conference is held. In eight others, monthly conferences are held.

The committee regards the progressive increase in the number of permission necropsies as indication of marked improvement in the work of many of the hos-

4. Cabot, R. C.: Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies, J. A. M. A. **59**: 2295 (Dec. 28) 1912.

5. Deane, J. C.: The Questionable Value of Present-Day Mortality Statistics, J. A. M. A. **79**: 1868 (Nov. 25) 1922.

6. Wells, H. G.: Relation of Clinical to Necropsy Diagnosis in Cancer and the Value of Existing Cancer Statistics, J. A. M. A. **80**: 737 (March 17) 1923.

7. Report on Postmortem Examinations in the United States by a Committee of the New York Academy of Medicine: Lewinski-Corwin, E. H.: Statistics of Postmortems in Large Hospitals of the United States and Abroad, J. A. M. A. **60**: 1787 (June 7) 1913.

8. Reports of Committee (E. E. Irons, D. J. Davis, J. P. Simonds, A. Frick, A. Kanavel) on Necropsies in the Hospitals of Chicago, Proc. Inst. Med. Chicago **3**: 150, 310, 1920; **4**: 126, 230, 1923.

pitals, and goes on to point out what is of great interest by reason of its general applicability; namely, that "the patients received in these hospitals do not differ in race, religion or degree of intelligence from patients entering other hospitals in which necropsies are rarely held. The chief difference between the two groups of hospitals lies in the difference in attitude of staffs. In some instances in both groups of hospitals, undertakers . . . attempt to hinder . . . obtaining of necropsies. This obstacle can be overcome to a large extent by seeing to it that the activities in the hospital of such ignorant undertakers are restricted until their unjustified attitude is modified." [9]

I fancy I hear hospital physicians say, "What can we do? We have no trained pathologist." The answer in such cases is be your own pathologist, or delegate the making of necropsies to some member of the staff who shall be encouraged to become as proficient in the work as possible. Bright and Addison did not need a pathologist to help them. They followed their patients to the postmortem room and there they themselves sought for explanation of the signs and symptoms observed during life. The trouble is that there are so few physicians "in whom the death of a patient produces a complex that only a postmortem examination can satisfy."

SUMMARY AND PROPOSAL OF HOSPITAL NECROPSY PROGRAM

The necropsy percentage of a hospital is a valuable indicator of its efficiency, and it should be taken into consideration in hospital rating.

Every hospital should provide suitable places for keeping bodies, for making necropsies, and for burial preparation.

Every hospital should do all it can as an organization to promote necropsies, and request for permission to make a necropsy should be made in all cases according to a definite plan in which the importance of the necropsy to the family and the community is emphasized.[10]

When a necropsy is held, those concerned should be informed fully of the results; complete records of all necropsies for purpose of study and statistics should be kept; the necropsy percentage should be determined from time to time; and, whenever possible, regular conferences for the presentation of clinical and pathologic observations and specimens should be held.

Finally, repeated surveys of necropsies in the hospitals of a city or other convenient geographic subdivision, the results of which are published at suitable intervals, will be of great interest and value.

9. In 1923, the council of the Chicago Medical Society adopted the following resolution in regard to undertakers and necropsies:

WHEREAS, A real obstacle in the way of obtaining permission to make autopsies is the more or less open opposition by many undertakers who advise against granting permission for various pretended reasons, a favored one being that "the body cannot be embalmed after autopsy"; and

WHEREAS, Certain other undertakers offer willing and helpful cooperation with physicians in securing autopsies, and announce that they can "assure the relatives that the body will look just as lifelike and be preserved just as long as though no autopsy had been held," it is

Resolved, That the Council of the Chicago Medical Society records its hearty approval of the enlightened policy in favor of autopsies, recommends its prompt adoption by undertakers in general, and urges on the members of the Chicago Medical Society to insist on their inherent right, in the interest of the advancement of medical knowledge, to receive cooperation, and not antagonism, from undertakers in seeking permission to make autopsies.

10. Wilson, L. B.: The Necropsy as a Public Service, J. A. M. A. **64**: 1560 (May 8) 1915. Bluestone, E. M.: Value of Post-Mortem Examinations and Methods of Obtaining Them, Mod. Hosp. **18**: 423 (May) 1922. Krumbhaar, E. B.: The Need for Postmortem Examinations and the Methods of Securing Them, J. A. M. A. **80**: 1682 (June 9) 1923.

SPONTANEOUS RUPTURE OF THE SPLEEN FOLLOWING A CARBUNCLE

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Traumatic rupture of the spleen, as the result of a contusion, a fall or a blow, is not uncommon. Spontaneous rupture is much less frequent, although cases are reported in patients with certain diseases, particularly malaria [1] and typhoid fever.[2] In a few of these cases the rupture seems entirely spontaneous, but in most of them it accompanies some exertion, usually severe, but at times very slight.

Connors [3] reported a case of a man who, except for some constipation extending over a period of three weeks, seemed in good health until he experienced a sudden, sharp pain in the left hypochondrium. Operation showed a rupture of the spleen with a subcapsular hematoma. No history of injury or exertion could be obtained. Connors compiled from the literature twelve cases of spontaneous rupture of the spleen. Five of these were in tropical countries, so, although no diagnosis of malaria is reported, the possibility that it was the cause must be considered. Of the others, two ruptures occurred without any apparent cause in otherwise normal persons; two followed slight exertion on the part of patients who were convalescing, one from sepsis on account of which a finger had been amputated, and the other from a "severe illness, possibly typhoid." Again, rupture occurred without any known exciting cause in a patient who had rheumatism and a tuberculous kidney; another in a patient with an ulcerative, gangrenous carcinoma of the stomach and probably an acute splenitis; and the final case followed severe exertion in a man who had for some time previously been suffering from a paronychia. Fieber [4] reports a case of a man who suffered rupture of the spleen while convalescing from an appendectomy and an attack of influenza. He calls attention to the hemorrhagic tendencies, enlargement and softening of the spleen which have been noted in influenza.

The case here reported has certain points in common with some of the cases reviewed, but it also presents certain features that make it quite peculiar.

REPORT OF CASE

A man, aged 30, seen in the outpatient department of the students' health service, April 4, 1922, at 10 a. m., with a temperature of 101.2 F., had a small carbuncle on the back of his neck. He stated that this "boil," the first one that he had had, appeared on April 1. With the assistance of some friends, he had attempted to treat it. April 3, he felt "sick and feverish, and during the night had a high fever," so he finally consulted a physician.

In the outpatient department a small incision was made into the carbuncle and some pus was removed. He was then sent to the ward, and hot wet applications were made. His only complaints at this time were fever, and stiffness and pain in the neck and shoulders. His temperature in the afternoon was 104, and the pulse was 110. The patient was extremely toxic.

1. Leighton, W. E.: Spontaneous Rupture of the Malarial Spleen, with Abstract of Cases Reported Between 1842 and 1921, Ann. Surg. **74**: 13-19 (July) 1921.

2. Osler, William: Typhoid Fever, in Principles and Practice of Medicine, New York, D. Appleton & Co., 1916, p. 12.

3. Connors, J. F.: Ruptured Spleens: Spontaneous and Subcutaneous, Ann. Surg. **74**: 1-12 (July) 1921.

4. Fieber, E. L.: Ueber einen Fall von sogenannter spontäner Milzruptur im Zusammenhang mit Grippe und eitriger Blinddarm-Bauchfellentzündung, Wien. klin. Wchnschr. **34**: 581-583 (Dec. 1) 1921.

April 5, at 7 a. m., the temperature was 103.6; the pulse, 104. There was definite icterus of skin and sclerae. He complained of a slight pain in the left hypochondrium, worse on taking a deep breath. There was no cough or pain in the chest. The pain in his shoulders had decreased, but there was some aching of various other joints. Under gas anesthesia, a surgeon made a liberal incision and removed a mass of necrotic material that was apparently obstructing drainage. There was very little local inflammation or infiltration. Physical examination showed a moderate generalized icterus, and no swelling or tenderness of joints; the heart and lungs were normal; the abdomen was moderately distended, with no tension or tenderness. The leukocyte count was 22,500. The urine was normal. A bacteriologic smear from the carbuncle showed only gram-positive cocci. Cultures from the lesion and from the blood showed after less than twenty-four hours' incubation a pure growth of *Staphylococcus aureus*.

During the day of April 5, the patient became progressively more toxic, his respiratory rate increased, and he complained of severe pain in the left hypochondrium. There was definite tenderness, with some rigidity and muscle spasm, in this region. The spleen could not be palpated; the liver did not seem enlarged. The rest of the abdomen seemed normal. The heart and lungs were essentially normal.

April 6, the patient had spent a very uncomfortable night, and at 7 a. m. his temperature was 102.6; pulse, 96. At 8:30 he complained of a very sharp pain in the left hypochondrium, and his condition became definitely worse. The jaundice was deeper. He was dyspneic and cyanotic. Examination of the lungs revealed nothing. The heart rate was rapid, but no murmurs were heard. The radial pulse was very weak, and in a short time could not be obtained. There was no response to various stimulants that were administered, and at 12:15 p. m. the patient died.

The clinical diagnoses were: carbuncle of neck; staphylococcic bacteremia; multiple metastatic abscesses of spleen and other organs.

NECROPSY FINDINGS

Necropsy, performed by Dr. B. J. Clausen of the department of pathology, revealed an icteric tinge of the skin and sclera, and a small carbuncle on the posterior part of the neck. The peritoneal cavity was full of free blood, and clots were present below the left side of the diaphragm. The lower lobe of the left lung showed decreased crepitation, and on section was found to contain an increased amount of blood-stained fluid. The spleen was about twice the normal size, and showed a rupture of the capsule at its inferior pole. A clot, about 3 cm. in diameter, was attached to the splenic pulp where it projected through the ruptured capsule. The liver and kidney showed only passive congestion and cloudy swelling. Other organs showed no gross changes. Bacteriologic cultures taken from the blood in the peritoneal cavity, from the spleen, and from the carbuncle all contained pure cultures of *Staphylococcus aureus*. Microscopic examination of the tissues sectioned showed foci of polymorphonuclear leukocytes outside the portal spaces of the liver, large areas of the lung in which the alveoli were filled with blood, and intense congestion of the splenic pulp with polymorphonuclears scattered throughout. The pathologic diagnoses were: (1) incised carbuncle of neck; (2) *Staphylococcus aureus* septicemia; (3) spontaneous rupture of the spleen with hemorrhage into the peritoneal cavity; (4) passive congestion and cloudy swelling of the liver and kidneys; (5) acute passive congestion of lungs; (6) beginning liver abscesses, and (7) acute splenitis.

COMMENT

No cause for the rupture of the spleen was evident even after the necropsy. With the staphylococcic bacteremia, abscess formation was thought probable, but microscopic examination of the tissues showed that metastatic abscesses had just begun to form. Hence it seems probable that rupture occurred spontaneously, as a result of the intense inflammation and acute tumor.

THE CATALYTIC ACTION OF MINUTE AMOUNTS OF COPPER

IN THE DESTRUCTION OF ANTISCORBUTIC VITAMIN IN MILK *

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About four years ago it was shown by one of us [1] that the antiscorbutic vitamin is readily destroyed by oxidation. Experiments clearly demonstrated this reaction on incubating milk to which 0.4 per cent. of a normal solution of hydrogen peroxid had been added (Chart 1). This result is of clinical significance in view of the fact that the addition of similar percentages of hydrogen peroxid have been recommended in order to preserve breast milk, and that it has been extensively used by dairies in Germany to prevent milk from souring. Indeed, it is probable that one of the important factors that have led to the notable increase of infantile scurvy in Berlin during the last few years has been the addition of this apparently harmless preservative to the milk supply. Orange juice, after subjection to oxygen for a short period, was found likewise to have lost some of its vitamin potency. It was suggested that the harmful effect on milk and other foods that had been termed "aging" is merely a paraphrasing of the effect of oxidation, and that this reaction probably accounts for "the difference in the antiscorbutic potency of foodstuffs which have been treated apparently in similar ways, for example, of milk which has been heated in open pans or in hermetically sealed bottles."

The following year this aspect of the vitamin problem was enlarged so as to include the action of a catalyst in furthering the destructive oxidation of antiscorbutic vitamin.[2] The following experiment illustrates this phenomenon:

Two groups of guinea-pigs were fed by pipet equal amounts of milk, identical except that the one lot had been heated in a glass vessel whereas the other had been heated in a copper vessel for forty minutes at 60 C. They received, in addition, oats ad libitum and water; the bedding was composed of straw. The milk consisted of dry milk, dried by the Just roller process, which had been reconstructed to a fluid basis by the addition of water. The equivalent of 100 c.c. of fluid milk was fed daily to each animal. Dried milk rather than fluid milk was made use of, as it can be concentrated to about half the natural bulk, a factor of technical value when large amounts of fluid have to be fed by pipet. In order to ascertain whether failure in nutrition might be merely the result of the ingestion of copper, a third series of animals was given 2 c.c. of orange juice per capita daily, in addition to the milk heated in a copper container.

Charts 2, 3 and 4 portray these tests better than a detailed description. It will be noted that the guinea-pigs which received milk heated in the copper vessel all developed scurvy within a month, whereas those which received similar milk plus 2 c.c. of orange juice throve well, gained steadily and did not develop scurvy. Evidently the failure to gain and subsequent death was the result of a lack of antiscorbutic vitamin and not due

* From the Department of Pathology, Columbia University, College of Physicians and Surgeons.

1. Hess, A. F.: Brit. M. J. **2**, 147, 1920. Hess, A. F., and Unger, L. J.: The Destructive Effect of Oxidation on Antiscorbutic Vitamin, Proc. Soc. Exper. Biol. & Med. **18**: 143, 1921.

2. Hess, A. F., and Unger, L. J.: The Destruction of the Antiscorbutic Vitamin in Milk by the Catalytic Action of Minute Amounts of Copper, Proc. Soc. Exper. Biol. & Med. **19**: 119, 1921.

to the injurious effect of copper. The group that was fed the milk heated in a glass container failed to develop scurvy, but did not thrive or gain so well as those which received orange juice. This we interpret as indicating, as pointed out by several observers, that 100 c.c. of pasteurized milk may not contain an optimal quantity of the antiscorbutic factor and, accordingly, that the growth of these animals suffered from this deficiency. The milk heated in the glass vessel was found to con-

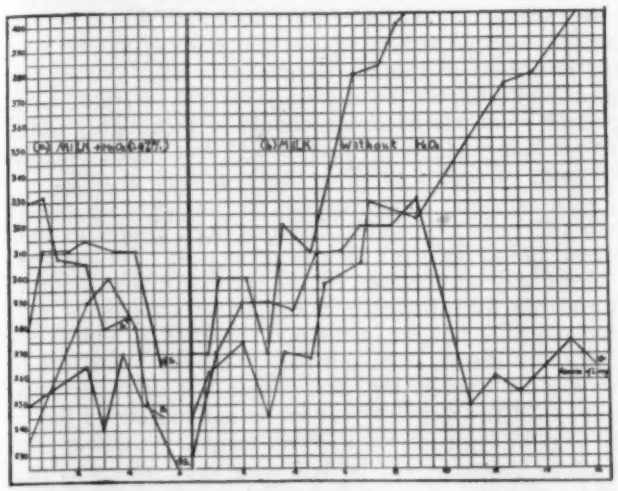

Chart 1.—Growth curves of guinea-pigs fed daily: (*a*) 80 c.c. of milk to which hydrogen peroxid had been added, and (*b*) milk without hydrogen peroxid.

tain 0.4 part per million of copper, as determined by the potassium ethyl xanthate method, whereas that heated in the copper container contained 14 parts per million. The percentage of iron was the same in the two.

Various investigations have shown that cow's milk normally contains an appreciable amount of copper. The recent determinations of Supplee and Bellis,[3] and others, have established an average content of about 0.5 part per million, a ratio that will be somewhat greater when cows are fed on pasture, and somewhat lower when they are fed entirely on dry fodder. Still more recent investigations have shown that breast milk contains approximately the same percentage of copper as cow's milk.[4] Bearing the normal percentage of copper in mind, it seemed evident that the milk containing 14 parts per million of copper had been contaminated by contact with the copper vessel to a degree that does not occur under industrial conditions; so that, although the test clearly demonstrated that copper brings about a destruction of antiscorbutic vitamin, smaller amounts must be added to milk if this phenomenon is to be accorded a practical rôle. Accordingly, dried milk was prepared which, on reconstruction to a fluid basis, contained only 9 parts per million of copper. The copper was added as copper lactate before the milk was dried. This milk was fed to a series of guinea-pigs in 70 c.c. per capita daily amounts; less was given than in the prevoius experiments, because the milk was not pasteurized and thus further depleted of antiscorbutic vitamin. A control series of animals received similar milk dried at the same time by the same process, but to which no copper had been added.[5] As in the previous test, the guinea-pigs received water and an unrestricted supply of oats.

The result of this experiment may be summarized by the statement that whereas only one of the eight control animals developed scurvy, ten of the fourteen receiving the contaminated milk showed signs of this disorder, and, furthermore, that the latter group died after a period of from four to five weeks, whereas the former lived from two to three months. The data are given in the accompanying table. Two points stand out clearly from these tests; first, that the per capita quota of milk was on the borderline and was not sufficient to prevent the development of "latent scurvy" and bring about normal growth, and, second, that the addition of 9 parts per million of copper is sufficient to destroy the antiscorbutic vitamin of milk in the course of a rapid heating and drying process.

In the next experiments, 6 parts and 2.5 parts per million, respectively, of copper were added in the same way as in the previous test, and the milk was fed to guinea-pigs in like amount. A control series of animals which received "normal" dried milk was run simultaneously. Of the animals fed the milk containing 6 parts of copper per million, four out of the five, which lived a month or more, developed scurvy, and of those receiving the milk containing 2.5 parts per million of copper, five of the six developed scurvy within about a month. The outcome of those which received "normal" or unadulterated milk has just been discussed.

It is not possible to state precisely the amount of copper that it is necessary to add to milk to bring about scurvy. This amount will depend largely on the initial vitamin content of the milk, as well as on the quantity that is fed, for only a part of the vitamin is destroyed. Had we fed the guinea-pigs larger quantities, it is certain that fewer would have developed scurvy and that the signs would have been far less pronounced. The experiments that have been outlined are of value merely in demonstrating that the addition of small amounts of copper, of as little as 2.5 parts per million, suffice to destroy an appreciable amount of the antiscorbutic vitamin of milk.

The question naturally arises as to the degree to which milk becomes contaminated with copper in the

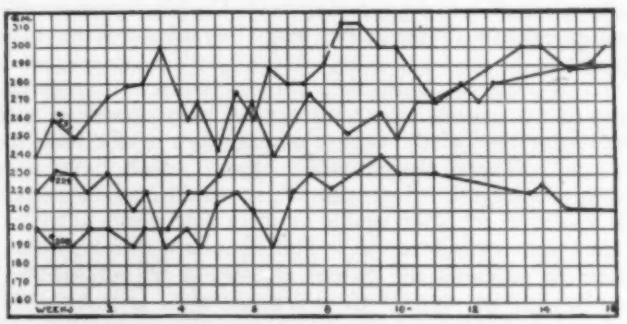

Chart 2.—Growth curves of guinea-pigs fed 100 c.c. daily of milk pasteurized in a glass container.

course of industrial processes, more particularly pasteurization, condensing and drying. This depends on many factors, and will vary according to whether the process is well supervised or there is carelessness in handling the milk. The degree to which the milk is exposed to air is very important, not only with regard to oxidation and destruction of the antiscorbutic vitamin, but indirectly with respect to the amount of copper that goes into solution. This point was brought out

3. Supplee, G. C., and Bellis, B.: The Copper Content of Cow's Milk, J. Dairy Sc. **5**: 455, 1922.

4. Hess, A. F.; Supplee, G. C., and Bellis, B.: Copper as a Constituent in Woman's and Cow's Milk: Its Absorption and Excretion by the Infant, J. Biol. Chem. **57**: 725, 1923.

5. All the dried milk used in this investigation was prepared by Dr. Supplee of the laboratory of the Dry Milk Company, Adams, N. Y.

convincingly in experiments carried out a few years ago by Golding and Feilmann,[6] who showed that if air was allowed to bubble through milk, or if copper gauze was suspended on its surface, the amount of copper that was dissolved increased enormously. These results have been substantiated by Rice and Miscall,[7] who employed oxygen and air in testing the extent to which copper went into solution. Interpreted in terms of industrial methods, this would mean that open pasteurizers, coolers and holding tanks will give up much more copper than vacuum pans, and that when such apparatus is employed, it is especially important that copper should not come in direct contact with the milk. Experiments by these investigators showed beyond doubt, on the other hand, that carbon dioxid has no influence on the solvent power of milk for copper.

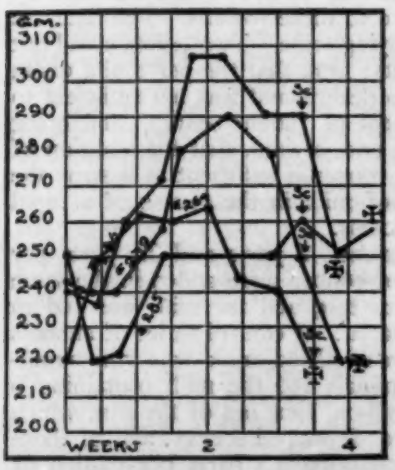

Chart 3.—Growth curves of guinea-pigs fed 100 c.c. daily of milk pasteurized in a copper container.

It is evident that the greater the surface exposed and the longer the time of exposure, the more will be dissolved. Temperature is likewise a factor to be considered. As in the case of most chemical processes, the solvent power will be greater when the solution is warm than when it is cool, and it has been found that milk attacks copper much more readily at the temperature of pasteurization, 145 F., than at room temperature. This action does not seem to be increased, however, by raising the milk to the boiling point. Some experiments indicate that the amount of copper that is brought into solution depends on the acidity of the milk. It is probable that this action does not run parallel to the degree of acidity, but that there is an optimal level, below and above which less copper is dissolved. Moreover, interacting chemical reactions may be involved in this process.

It is evident from this cursory survey that there are many factors that play a rôle, in addition to the mere question of the degree of exposure of the milk to copper. There are probably others which have not been considered. For example, it would be interesting to ascertain whether visible or ultraviolet light must be taken into consideration. The dominant factor, however, is probably the extent and the condition of the surface of the copper to which the milk is subjected. All experiments agree as to the readiness with which copper dissolves from a corroded surface as compared with one that is well polished. Rice and Miscall [7] found that "copper corroded with an oxid surface" yields much more of the metal to milk than the smooth bright copper, and urged the importance of keeping the equipment clean and well polished. They advised that the use of chlorin disinfectants, such as chlorinated soda, be discontinued, as they are active in corroding the copper surfaces of hot well, vacuum pans, etc. In view of this danger, it is the practice to line copper heaters with tin. The coating of tin, however, is very thin and readily removed in the course of scouring, as there is no solution that will render the milk deposit soluble and at the same time not injure the metal. These various considerations raise the question as to whether tin-lined copper pipes should be used in the heating of milk, whether they should not be replaced by some other metal. This suggestion gains added force when we consider that, although the pipes are usually well protected by tin, the pumps, valves, etc., are protected inadequately, or not at all. Nickel has been suggested as a substitute for copper, but, as is evident from what follows, should be thoroughly tested before being adopted. Richmond [8] has stated that the presence of traces of silver lends a taste to milk.

Bearing these considerations in mind, let us inquire into the ratio of copper that has been found in milk heated industrially by various processes. These observations may be prefaced by the statement that we have found but little increase in copper in samples of pasteurized milk bought in the open market in New York City. As stated, milk normally contains about 0.4 or 0.5 mg. of copper per liter, which is 4 or 5 parts per million. This amount was increased merely to 0.6 or 0.7 mg. in the samples that we tested, indicating that, in these instances, the pasteurizing apparatus was well cared for. This favorable condition probably does not obtain everywhere or at all times. It has been found that the passage of milk through sanitary piping from which the tin was worn resulted in an increase in copper content by as much as 2 mg. of copper per liter, or 2 parts per million.[9] In a report furnished us by Dr. H. D. Pease, it appears that as high as 4.52 parts per million of copper were found in the milk in the old

Results of Feeding Guinea-Pigs Uncontaminated Milk and Milk to Which Traces of Copper Had Been Added Previous to Heating

Guinea-Pigs No.	Diet	Copper Added, Parts per Million	Weights, Gm. Onset	Weights, Gm. Terminal	Duration of Experiment, Weeks	Development of Scurvy	Comment
256	70 c.c. milk oats	0.0	220	236	13	None	
235		...	260	250	6	S.	
264		...	254	260	12	None	Pneumonia
978		...	250	240	9	None	
K1180		...	202	380	12	None	
261		...	240	240	7	None	
286		...	270	248	9	None	
294		...	260	270	7	None	
269		2.5	240	210	4	S.	Pneumonia
268		...	280	270	5	S.	
272		...	290	220	5	S.	
296		...	266	244	4	S.	
277		...	264	230	4	None	
221		...	250	226	4	S.	
300		6.0	240	240	3	S.	
295		...	220	254	5	S.	
293		...	250	208	4	None	Bloody fluid
900		...	274	260	4	S.	in pleural
244		...	200	214	4	S.	cavity
222		9.0	250	200	5	None	
270		...	290	234	5	None	
268a		...	234	200	6	None	Pneumonia
124		...	250	250	5	None	
900a		...	264	260	5	S.	
296		...	262	240	5	S.	
298		...	308	300	4	S.	Pneumonia
300a		...	300	300	5	S.	
299		...	280	290	5	S.	Pneumonia;
290		...	308	320	4	S.	hemorrhages
291		...	360	370	4	S.	of both knees
292		...	330	320	5	None	Pneumonia
294		...	336	340	4	S.	
216		...	330	290	7	S.	Pneumonia
298		...	340	306	4	S.	

6. Golding, J., and Feilmann, E.: Taint in Milk Due to Contamination by Copper, J. Soc. Chem. Indust. **24**: 1285, 1905.

7. Rice, F. E., and Miscall, J.: Copper in Dairy Products and Its Solution in Milk Under Various Conditions, J. Dairy Sc. **6**: 261, 1923.

8. Richmond, A., in discussion on Olson's paper (Footnote 11).

type of heater, and 1.82 from the bottling machine. Contamination frequently results in the course of condensing or evaporating milk, as the condensing apparatus is very difficult to keep clean, and copper lactate accumulates readily on the pans. Experiment has shown that condensing in copper vacuum pans caused an increase in the copper in milk from 0.38 to 2.98 mg. per liter, which was further increased by storing in copper containers. These investigators determined the copper in ten samples of sweetened condensed milk and in six of evaporated milk which represented nine brands. The amount of copper per kilogram varied from 2.4 to 4.8 mg., averaging 3.7 mg., and the conclusion is drawn that "taking 0.5 mg. per liter as the amount of copper naturally present in cow's milk, it is evident that the milk had added considerable quantities of copper in the process of manufacture." Were it not for the fact that condensing is carried out in a vacuum or partial vacuum, condensed milk would be deprived of almost all its antiscorbutic vitamin. As the result, however, of the exclusion of air in the course of the heating process, such milk may retain the greater part of its antiscorbutic potency.

A survey of these various investigations leads to the conclusion that, under ideal industrial conditions, such as obtain in modern, well equipped and properly supervised plants, the danger is not great, of the contamination with copper being sufficient to lead to a significant destruction of the antiscorbutic vitamin. On the other hand, it is probable that with the increase of pasteurization throughout the United States, the normal 0.5 mg. of copper per liter is at times raised by means of contamination to the 2.5 mg. per liter, a percentage which our investigation has demonstrated leads to a considerable destruction of this vitamin. It should be borne in mind that these experiments have not determined the minimum amount of copper necessary to bring about a partial destruction of this factor. It is possible, if not probable, that less than 2.5 mg. has a deleterious effect, for it is unlikely that destruction should suddenly begin just at the ratio which we arbitrarily selected.

The minuteness of the amount of metal that can bring about catalytic reactions has always been a subject of wonder. In the brewing industry, it has long been known that the mere conduction of beer from the filter press to the racking machine by means of tin pipes is, at times, sufficient to bring about turbidity.

In this study we have focused our attention on the antiscorbutic vitamin; but, as is well known, fat-soluble vitamin A is likewise sensitive to oxidation and readily destroyed by oxidative processes. It is probable, therefore, that additions of copper lead to a destruction also of this vitamin in the course of pasteurization, condensing, etc. It would be interesting to carry out a similar series of experiments on rats to determine the loss of the fat-soluble vitamin as the result of catalytic action.

This subject has a bearing which extends beyond the narrow confines of the milk industry. Some years ago, Hunziker and Hosman [9] demonstrated that iron and copper, their lactates and their hydrates, when in contact with butter, brought about a disagreeable tallowy flavor and accelerated bleaching. Some years later, Rogers, Berg and their collaborators [10] showed that the addition of even minute quantities of metal salts, such as the salts of copper and of iron, have a marked accelerating action on the rate of deterioration of butter. They state that "in several instances the scores on the control butter were better than those on the butter made from cream to which copper had been added, even in the small amount of 1 mg. of copper per kilo of cream." This raises the question of a destruction of the fat-soluble vitamin, a subject of importance in view of the fact that we depend to a large extent on butter and cream for supplying this vitamin. The scope of this subject may indeed go beyond the consideration of dairy products and be pertinent to the heating and preserving of other foodstuffs rich in vitamins, for example, the green vegetables. Furthermore, it may affect the physiologic activities of the body. It has been shown by Olson [11] that copper and, especially, nickel markedly retard the action of rennet on milk; when milk was retained in a nickel-plated copper cylinder at 87 F., the action of rennet was only one-half to one-fifth as rapid as when it had been

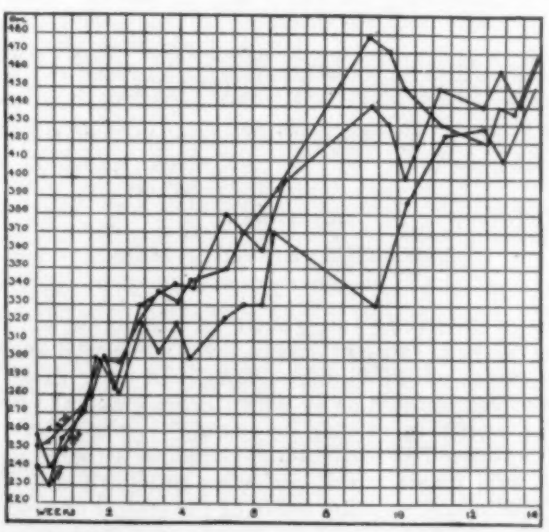

Chart 4.—Growth curves of guinea-pigs fed 2 c.c. of orange juice daily, in addition to 100 c.c. of milk pasteurized in the copper container.

retained in glass. Retention and heating in a nickel dish brought about a similar effect. That this action was due to finely divided nickel or nickel salts seemed to be demonstrated by the fact that the retardation was less when the nickel cylinders were previously washed. The entire subject of the action of catalysts is one which has been merely touched on and would seem to be of importance from various aspects, in relation to nutrition and to industrial methods of handling foods.

CONCLUSIONS

Antiscorbutic vitamin is readily destroyed by oxidation, especially when the oxidative process takes place in association with heat. This sensitiveness leads to a partial loss of this factor in the process of pasteurization. The gradual decrease of vitamin in the course of the "aging" of foodstuffs, such as vegetables, is to be interpreted in this way.

Catalysis greatly increases the velocity of oxidation and thus furthers the destruction of this vitamin. A series of animal experiments demonstrated that when as little as 2.5 mg. of copper per liter, 2.5 parts per million, were added to milk, the antiscorbutic vitamin was

9. Hunziker and Hosman: Tallowy Butter: Its Causes and Prevention, J. Dairy Sc. 1, No. 4, 1917.
10. Rogers, L. A.; Berg, W. N.; Potteiger, C. R., and Davis, B. J.: Factors Influencing the Change in Flavor in Storage Butter, Bull. 162, Bureau of Animal Industry, U. S. Dept. Agric., 1913.
11. Olson, G. A.: Influence of Metals on the Action of Rennet, Wisconsin Station Report, 1907, p. 134.

appreciably reduced in the course of heating. Although copper does not go into solution to this extent in the course of well supervised pasteurization, such contamination readily occurs when the equipment is not in good repair or well cared for. The risk is still greater in the process of condensing milk.

A similar danger exists with regard to the contamination of butter and cream. The importance of copper in relation to these dairy products lies in the fact that we are largely dependent on them for our quota of the fat-soluble (vitamin A), and that this vitamin is also highly sensitive to the destructive action of oxidation. The circumstances may be the same in relation to other foodstuffs rich in one or both of these nutritional factors, for example, the green vegetables.

At present, contaminations of foods with copper or other metals are judged by the standards of toxicology. This criterion is manifestly inadequate, for even nontoxic traces of these substances suffice to bring about the catalytic destruction of the vitamins.

16 West Eighty-Sixth Street.

IS SCARLET FEVER MERELY A STREPTOCOCCIC ANAPHYLAXIS?

FOUR CASES OF SCARLATINA APPARENTLY MANIFESTED ONLY BY INFECTION OF MASTOID PROCESS AND ANTRUM OF HIGHMORE

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One of the strongly suggestive facts as to the identity of the bacterial cause of scarlet fever is the well known impossibility of differential diagnosis in some cases of streptococcic septicemia in which every classical symptom of scarlet fever may be found. While observers have considered as scarlatina the conditions found associated with severe burns, and after childbirth and surgical operations, showing many of the typical symptoms of that disease, it is almost certain that they have to deal with a streptococcic septicemia. As long ago as 1895, Bergé,[1] writing on the origin of scarlet fever, regarded it as a disease produced by the streptococcus in one of its virulent forms. Similarly, Dale speaks of it as a streptococcus anaphylaxis superimposed on a streptococcic infection of the throat, or on a streptococcus septicemia from some other portal of entry. He asks, What, after all, is the difference between a streptococcus sore throat, with fever, cervical adenitis and nephritis, and even the so-called "septic rash," on the one hand, and scarlet fever, on the other? Yet they are certainly regarded by most men as separate pathologic entities. Just as I finished this paper, the article by Drs. G. F. and Gladys H. Dick,[2] describing the experimental production of scarlet fever by injection of a filtrate of culture of the hemolytic streptococcus, appeared. Moreover, the skin test that they describe bears a specific relation to immunity to scarlet fever.

The circumstantial evidence, as the term is used in law, is very strong in the four cases here reported, that the infection was of scarlatinal origin, on the one hand, and that no other evidence of the disease was evident, on the other. The patients were all nurses, who share with other medical attendants a relative immunity from infections, had never had scarlet fever, and had all been exposed to the disease in the scarlatina pavilion shortly before the infection of the mastoids and antrum. From their throats and noses was isolated practically in pure culture the hemolytic streptococcus, and the same organism was repeatedly secured from the antrum of the one patient and the middle ear and mastoid of the other three. Two of them had small tonsils, and two had none. One patient was a carrier of the Klebs-Loeffler bacillus some weeks before the mastoid infection, but this was absent at this time. The only possible exception to the statement that no scarlatina symptoms were seen is that of the double mastoid, and it is mentioned merely in the interest of scientific accuracy. Some few epithelial scales were found on the feet of the patient after being in bed two weeks, but the feet of any patient who has high fever and been in bed for two weeks will almost certainly show desquamation on the soles and between the toes.

During the winter of 1922-1923, there was an unusual number of scarlet fever cases in this city, most of them particularly virulent, and nearly all associated with some of the more serious complications, such as otitis media, mastoiditis or acute nephritis. The situation was a distinct menace, and I am digressing to this extent to show the malignancy of the infection, thus leading up to the conclusion that those exposed to the infection, who showed no true scarlatina and yet did show a hemolytic streptococcic infection shortly after exposure, can be fairly assumed to have become sensitized to the particular strain of streptococcus which was seemingly causing scarlet fever; in other words, to have scarlet fever limited to the mastoid and antrum of Highmore, as it were (in my four cases). In further corroboration of my belief that I was confronted with an anomalous manifestation of scarlet fever, it is interesting to add that the cultures of all four patients, and of all the patients with whom they had been in contact, were morphologically identical and behaved alike in all culture mediums, being hemolytic, as I have mentioned before. They were certainly the same strain and of a common origin. It can well be objected that doubtless these patients did contract their infection from the streptococci of the scarlet fever patients; but this does not prove that theirs was a scarlet fever infection, if the patients themselves did not show any symptoms of this disease. This would bring us back just where we started at the beginning hypothesis of this paper: If the hemolytic streptococci in question, derived from full blown scarlet fever cases, did not cause scarlatina in these four nurses, but merely an infection of the mastoid and antrum, why did it cause scarlatina in those with whom the nurses came in contact and from whom their local infections were derived? Reverting to the original supposition, the answer would be: Because scarlatina is the result of a sensitization to the streptococcus in its more malignant forms. This would explain its behavior in those who exhibit true scarlatina and in those who have merely local manifestations, such as the four reported here, and those numerous, so-called anomalous cases which show a slight nephritis, sore throat (streptococcic), fever and little or no rash.

REPORT OF CASES

CASE 1.—A young woman, who had nursed a patient with mild scarlet fever a few days, had an earache about 1 o'clock the night she left the case. Heat was applied, and the drum ruptured about three hours later. I saw her just afterward, and incised both drums under gas-oxygen anesthesia, the other

1. Bergé: La pathogénie de la scarlatine, Paris, 1895, quoted by Bristol, L. D.: A New Conception of the Cause of Scarlet Fever and the Other Acute Exanthems, J. A. M. A. **69**: 2139 (Dec. 22) 1917.
2. Dick, G. F., and Dick, Gladys H.: A Skin Test for Susceptibility to Scarlet Fever, J. A. M. A. **82**: 265 (Jan. 26) 1924.

one being suggestive, though not painful. The culture showing hemolytic streptococci, and the patient's condition becoming steadily worse, I did a double mastoidectomy on the fourth day, finding the usual enormous destruction of the hemorrhagic type of mastoid disease. For ten days the condition of the patient gave me much concern, the temperature fluctuations being irregular, and the toxicity grave. Despite the utmost care in daily dressing of the wound and cleansing of the canal, the drum on one side sloughed slightly, and constitutes another compelling reason for considering the infection scarlatinal in origin. The drum in acute otitis cases practically never sloughs except in measles and scarlet fever. An autogenous vaccine seemed to hasten the closure of the wound.

CASE 2.—This nurse had tonsils that showed the hemolytic streptococci, but she had no sore throat, her earache alone moving me to investigate her case, along with the fact that she had been exposed to scarlet fever. The drum was incised about three hours after the beginning of the earache, and the mastoid was opened on the sixth day thereafter. The operative findings were characteristic, the causative organism being recovered from the antrum as well as from the middle ear discharge. The patient showed extraordinary resistance to the toxin, as her recovery was rapid (three weeks) and she never felt ill after the first dressing, being allowed out of bed on that day. The condition of the mastoid was quite as bad as in the previous case, though, of course, it was a unilateral operative condition, while Case 1 was double.

CASE 3.—This patient was for about a week confined to the suspect pavilion, as a few Klebs-Loeffler bacilli had been found in one tonsil. While she was there I examined her ears, as she complained of slight discomfort in them, with no fever. Her tonsils were small, of the buried type and slightly red, but both drums were perfectly normal and her hearing was unimpaired. The discomfort was certainly not due to an otitis but referred from the tonsils, painting of which with silver nitrate caused disappearance of the otalgia as well as the Klebs-Loeffler bacilli. She then went to the scarlatina ward for three days, and while there developed an acute otitis media. I opened the drum and on the third day thereafter did a single mastoidectomy, with the usual findings. Her recovery was uneventful, save that her hearing took over three months to return to normal, and I think that the tonsils were partly responsible for the delay here. She declined to have them removed.

CASE 4.—This patient was for three weeks supposed to have had influenza, complicated with a fulminating infection of the antrum of Highmore, but her prostration was so extreme that it appeared unlikely that the diagnosis was entirely correct. Thus, I had a culture taken from the nasal discharge and her history carefully investigated, and found that she had certainly had contact with patients who subsequently developed scarlatina, and that the causative organism was a hemolytic streptococcus. The hemoglobin was reduced to 42 per cent., and her lassitude was in proportion; her appearance was that of a patient critically ill from chronic interstitial nephritis. By this time (three months) she had become thoroughly toxic, maintaining an evening temperature of 100 F., and in the morning about 99. After her hemoglobin had been raised to 55 per cent., as far as it seemed likely to go as long as she was absorbing so much toxin, a Caldwell-Luc operation was done and her condition returned to normal, not without further treatment for the blood condition, however. She received iron by intramuscular injection, and an autogenous vaccine.

CONCLUSION

Can we have scarlet fever without any throat or skin manifestation? On the other hand, can it be definitely stated that a patient with a throat infected with streptococci, and having fever and an exanthem, has scarlet fever, necessarily? If not, then what is scarlet fever? If so, what is "septic sore throat?" With these subtle distinctions in mind, is it not fair to assume that, in the presence of a local epidemic of scarlet fever of demonstrated virulence, with the invariable presence of hemolytic streptococci, when four nurses are exposed to these cases in the scarlatina wards and develop hemolytic streptococcic infection of the mastoid and antrum of Highmore, these infections are scarlatinal in origin? Moreover, if not a single classical symptom of scarlatina is found in these cases, may we not say that the mastoid and antral infections are atypical manifestations of scarlatina?

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NEPHRITIS IN EPIDEMIC ENCEPHALITIS

CLINICAL AND PATHOLOGIC REPORT, ILLUSTRATING THE DIFFICULTY IN DIAGNOSIS FROM MYOCLONIC UREMIA *

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The occurrence of nephritis not infrequently complicating acute cases of epidemic encephalitis in the Philadelphia General Hospital, and one case of nephritis which seemed to be a sequel of the disease, has prompted this report.

In a review of the voluminous literature of epidemic encephalitis, one is struck by the few instances in which detailed pathologic studies of the general viscera have been reported. It would seem that the only focus of pathologic study has been on the central nervous system. This tract, of course, should receive the more careful study, but it is hoped that this report may stimulate further investigation of pathologic changes in the viscera, in order to determine the extraneurologic complications of the disease. In the pathologic reports of organs they are, as a rule, given in a few words. A few observers have noted petechial hemorrhages of serous surfaces, resembling those seen in septicemia. The spleen, liver and kidneys have been dismissed with a diagnosis of acute parenchymatous degeneration, usually attributed to toxic changes in those organs. Meyer-Bisch and Stern [1] have recently found evidence, clinically, of liver lesions in eleven cases of chronic encephalitis, as evidenced by marked urobilinuria and levulosuria after ingestion of 100 gm. of levulose.

The bacteriology of this fearful affection is still much in dispute, and does not fall in the scope of this paper. Whether we take the view of Flexner of a filtrable virus allied to herpes simplex, or the virus isolated by the Mount Sinai (New York) group of workers, or accept Rosenow's microstreptococcus as the specific etiology makes but little difference in this discussion. At any rate, the weight of evidence is overwhelming that in the disease there is a generalized infection which should be capable of producing visceral lesions, as well as having specificity for the cerebrospinal system.

The only detailed necropsy studies of the kidneys I was able to find was done by Boyd.[2] He later reported before the American Neurological Association [3] his findings of lesions outside the central nervous system. In sixteen of his cases, eight, or 50 per cent. showed kidney changes that were distinctly pathologic. He urges that caution be used in drawing conclusions, since parenchymatous degeneration may accompany any febrile disorder; but the changes in some of his cases

* From the clinical and pathologic records of the Philadelphia General Hospital.

1. Meyer-Bisch, and Stern, F.: Ztschr. f. klin. Med., Berlin **96**: 328 (Feb. 28) 1923; abstr., J. A. M. A. **80**: 1742 (June 9) 1923.
2. Boyd, W.: Epidemic Encephalitis: A Study of Seventy-Five Cases with Sixteen Autopsies, Ann. Med. **1**: 195 (July) 1920.
3. Boyd, W.: Acute Epidemic Encephalitis, Association for Research in Nervous and Mental Diseases, New York, Paul B. Hoeber, 1921.

were so marked and so constant as to warrant the opinion that they were of real pathologic significance. The lesions in his cases were of two types: (1) vascular and (2) tubular. The vascular changes consisted of intense congestion of the capillaries. This was most marked in the straight vessels of the medulla, many of which were so distended as to produce narrowed lumina of the collecting tubules. In some places there were hemorrhages from the tubules, occasionally suggesting infarcts. Both the glomeruli and the intertubular plexuses showed a moderate degree of congestion, and a few blood cells could be seen in the capsular spaces of the glomeruli. Tubular lesions were degenerative and resembled those of the nephrosis described by Volhard and Fahr, a tubular nephritis such as is produced by mercuric chlorid. The cells to suffer most were those of the convoluted tubules and the ascending limb of Henle. The contrast between convoluted and collecting tubules was striking. There were some changes in the collecting tubules (the cells were lined with yellow granules).

In a symposium on epidemic encephalitis held before the Philadelphia County Medical Society, Dec. 13, 1922, Dr. William G. Spiller, in discussing the pathology of epidemic encephalitis, stated that in two of his necropsies the kidneys were greatly diseased.

The following cases are reported, mainly from the standpoint of the nephritis, which either complicated in two instances acute encephalitis or else were cases of chronic myoclonic uremia. Both cases illustrate difficulties in diagnosis between the two conditions. The third patient had chronic nephritis which seemed to be a sequel of the disease.

REPORT OF CASES

CASE 1.—*History.*—Mrs. C. V., a white woman, aged 44, admitted to the women's nervous wards, June 8, 1922, was delirious, overtalkative, tearful and disoriented. She developed persecutory delusions, and was transferred to the psychopathic ward. Her illness began, April 20, 1922, with pains in both legs, headache and blurred vision, followed by somnolence which persisted for two months. Examination on admission revealed the following positive neurologic findings: contracted, regular pupils, which reacted sluggishly to light; fine tremors of the hands; absent abdominal reflexes, and overactive deep reflexes without pyramidal tract signs. The temperature was 100. June 15, the delirium was more marked, visual hallucinations and coarser tremors of the hands were present, and the temperature was 102. She became weaker and stuporous on the 18th, and there were generalized twitchings of the extremities, with some rigidity. Myoclonic twitchings were also present in the face, trunk and abdomen. Dr. T. A. O'Brien reported a low grade neuroretinitis. The pupils later became fixed, and there was a bilateral Kernig sign. Pneumonic signs were present, and the patient died, June 24.

Laboratory Examinations.—A catheterized specimen of urine presented a cloud of albumin, with hyaline and granular casts. The blood and spinal Wassermann tests were negative. Throat culture showed staphylococcus and streptococcus. Blood count revealed: hemoglobin, 96; red cells, 3,780,000; leukocytes, 14,200; polymorphonuclears, 76; lymphocytes, 23; basophils, 1. Later the patient showed a moderate anemia with 24,300 leukocytes and 82 per cent. polymorphonuclears. The spinal fluid on admission revealed no cells or excess of globulin, with a negative colloidal gold curve. A later examination showed only 5 cells, negative for tubercle bacilli and with culture sterile. The blood chemistry on admission showed urea, 32 mg.; sugar, 135 mg.; on the 22d of the month, urea, 96; sugar, 153; creatinin, 2.7 mg. Spinal fluid chemistry on the 17th, sugar, 80, and urea, 22 mg. A diagnosis of epidemic encephalitis with acute nephritis was made.

Necropsy.—Four hours after death, the brain showed edema, slight arteriosclerosis, simple chromatolysis and pial thickening. No perivascular round-celled infiltration, typical of epidemic encephalitis, was found in the sections through pons, medulla or basal ganglions. Sections through the mesencephalon were not studied. From the pathologic point of view, the findings were those of a chronic productive meningitis and a toxic encephalitis. The heart showed brown atrophy; the lungs, congestion; the liver, cloudy swelling, and fatty degeneration; the spleen, acute splenic tumor; the left kidney weighed 100 gm. and measured 10.2 by 4.6 by 3.5 cm. The organ was firm, and cut readily. The capsule stripped easily, leaving a smooth, glistening surface. The cut surface was dark red throughout. The right kidney weighed 80 gm. and measured 10 by 4.6 by 2.5 cm. It was similar to the left.

Microscopic examination by Dr. W. P. Belk revealed that the capsule was slightly thickened with hyaline fibrous tissue. The glomeruli were slightly smaller than normal and in some places were lobulated; Bowman's capsules were practically unaffected. A very few showed swelling of the lining cells, with a slight amount of exudate into Bowman's space. The cells in the convoluted tubules were pale, staning at normal height. Many showed desquamation. Many had lost their nuclei, and all showed small, irregular, clear vacuoles, undoubtedly an early stage of fatty degeneration. The cells of the collecting tubules showed a similar but less marked condition. There was a fairly well marked increase of fibrous tissue in the medulla. This tissue was hyaline and noninflammatory, a condition which frequently occurs in people about the age of 45. There was no cortical fibrosis. The arteries showed moderate nodular hyaline thickening of the inner coats. The blood vessels were all moderately congested. The diagnosis was: (1) either a chronic or subacute nephritis, or (2) chronic interstitial nephritis, with moderate arteriosclerosis.

From the clinical point of view, this patient represented either a severe myoclonic type of epidemic encephalitis or chronic myoclonic uremia. In attempting to establish whether the nephritis was the cause or the effect of the disease: 1. Against uremia, there was no history of an antecedent nephritis; the patient gave a febrile reaction, and the duration was two months. There was only a moderate nitrogen retention. There was very little edema present, and advanced nephritic eye ground changes were absent. 2. In favor of uremia, it is well known that dry uremia may be present in the absence of nonprotein nitrogen retention. The characteristic pathologic changes of epidemic encephalitis were not found; instead, a chronic productive meningitis (arteriosclerotic) with a toxic encephalitis and brain edema, such as would occur in uremia. Nothing was found clinically or pathologically to substantiate a diagnosis of tuberculous meningitis. The kidney sections did not clear up the matter; there was a subacute nephritis (which could have occurred during the course of an acute infection) superimposed on a chronic interstitial nephritis.

It has been repeatedly observed that meningitides have been complicated by nephritis. Acute nephritis has been reported in epidemic cerebrospinal fever many times, and tuberculous meningitis has often been wrongly diagnosed in uremia. This difficulty in differentiating uremia from meningitis is illustrated by Garrod's [4] case. Thus far in the literature of epidemic encephalitis, only one article [5] has appeared illustrating the similarity between myoclonic uremia and encephalitis. In some of these cases with evidence of both nephritis and encephalitis present, it is almost impossible to establish an absolute diagnosis, even at necropsy.

4. Garrod, A. E.: Uremia or Meningitis? Lancet **1**: 835, 1909.
5. Roger, H., and Chaix, André: The Diagnosis of Myoclonic Uremia and Encephalitis, Presse méd. **29**: 461 (June 11) 1921.

CASE 2.—*History.*—Mrs. C. R., a white woman, aged 42, admitted to the women's psychopathic ward in the service of Dr. M. H. Bochroch, June 13, 1922, for about one year prior to her acute illness had had intermittent edema of the ankles, with weakness. In January, 1922, she began to feel drowsy, and next had blurred vision, vertigo, and twitchings of the arms and legs followed by a period of insomnia. With this she became depressed and suicidal, with failing memory. She was going through the menopause. Mentally, the patient presented the picture of an acute delirium with periods of lethargy from which she could be easily aroused, and she also showed marked euphoria. The positive neurologic findings on admission were: fixed pupils, nystagmus, neck rigidity, masseter tenderness, an expressionless facies, generalized myoclonic twitchings, absent abdominal reflexes, a bilateral Kernig sign, a marked hyperesthesia, neuroretinitis, and overactive deep reflexes without Babinski's sign. The temperature ranged from 99 to 101. June 15, she had a convergent strabismus and fine tremors of the hands. June 19, she developed a striking mental state, verbigeration, grandiose ideas with marked euphoria, and complete disorientation. She began to confabulate as in a Korsakoff psychosis: "I feel fine, except that I rode all night on a train and am tired. I will give you a letter telling you how to make enough money so you won't have to work any more." Each day she continued to say she had gone on some long journey, visited friends, and never felt better in her life. The muscle twitchings persisted, with marked rigidity, and she had severe pains. About June 17, she developed numerous deep decubital ulcers. The temperature began to mount, and she died, August 26, after six months' illness, with signs of a terminal infection and a marked meningitis, probably bacteremic from decubiti. The diagnosis was epidemic encephalitis, decubital ulcers with bacteremia, and chronic nephritis.

Laboratory Examinations.—A catheterized specimen of urine showed a trace of albumin, and many hyaline and granular casts. The blood, on admission, showed: urea, 19 mg.; sugar, 82 mg. June 15, urea, 26 mg.; sugar, 87; carbon dioxid, 49. June 22, urea, 26; sugar, 80; carbon dioxid, 47. July 11, urea, 37, with creatinin, 1.2 mg. The blood and spinal fluid Wassermann tests were negative; the leukocyte count was 11,500; polymorphonuclears, 79; lymphocytes, 20, with eosinophils, 1. Spinal fluid examinations, June 14 and July 20, revealed a slight increase in globulin, but no cells. Smears and cultures were sterile.

Necropsy.—A few hours after death, there was suppurative meningitis of the base of the brain; no bacterium was determined. This diagnosis did not explain a six months' illness, with almost negative spinal fluid findings within a month prior to the patient's death. Examination of sections through the pons, medulla, basal ganglions and cord did not reveal the perivascular round cell infiltration of epidemic encephalitis. In this case, as in Case 1, sections through the mesencephalon were not studied. From the pathologic picture there were not sufficient findings to diagnose epidemic encephalitis. The anatomic diagnoses of organs other than the kidneys were: aorta, early arteriosclerosis, heart, early coronary arteriosclerosis; lungs, lobular pneumonia, fibrinous pleurisy; spleen, early follicular splenitis; liver, fatty degeneration.

The left kidney weighed 155 gm., and measured 10 by 5.5 by 3 cm.; the organ was moderately firm. The capsule stripped readily from a pale brown, somewhat mottled, irregularly granular surface. The cut surface bulged; the cortical zone was pale brown and averaged 6 mm.; the glomeruli and cortical striations were somewhat indistinct; the medullary striations stood out prominently. There was a slight increase of peripelvic fat. The pelvic mucosa and ureter were normal. The right kidney weighed 160 gm.; it was somewhat congested, but otherwise resembled its fellow.

Microscopic examination by Dr. Belk revealed the capsule was torn; a section was taken through this area. The cortex showed considerable fibrosis extending downward in streaks from the capsule in a manner characteristic of the so-called arteriosclerotic nephritis. In the cortex there was a well marked development of fibrous tissue of the hyaline type, such as is very common in subjects of this age. The glomeruli were all contracted, some very markedly so; they were lobulated, and a few were completely hyalinized. In addition to these chronic changes, all were markedly congested and showed considerable vacuolization of the endothelial cells of the capillary tufts. A few showed a serous exudate into Bowman's space; no inflammatory cells, however, were present. This was accompanied in some cases by a swelling of the lining cells of Bowman's capsule. These cells in the convoluted tubules were low, pale, granular and markedly desquamated, while more than half had lost their nuclei. This change was universally distributed, so that it would appear that very few of the convoluted tubules were in an active functioning state. The collecting tubules showed a similar but less marked condition, and in addition some atrophy, especially of the fibrous tissue. The blood vessels were uniformly moderately congested. The arteries showed a moderate hyaline thickening of the inner coats. The diagnosis was: (1) subacute tubular nephritis, which could have developed during an acute infection; (2) subacute glomerular nephritis; (3) chronic interstitial nephritis.

This case presented several factors that make an unbiased interpretation difficult. The woman had an antecedent history of possible early chronic nephritis coming with the menopause. In her involutional state she contracted an acute febrile encephalitis, which represented several types: She had myoclonus with a paralysis agitans syndrome and a striking Korsakoff delirious reaction (alcoholism was ruled out in this case); later, a suppurative meningitis, which was a terminal infection, probably from decubital ulcers. It was the consensus that this infection accounted for the purulent meningitis, since it could not have been present until shortly before death because of absent pleocytosis of the spinal fluid.[6]

In this case, as in Case 1, the clinical findings and pathologic diagnosis do not agree. Although in the routine study the picture usually seen in epidemic encephalitis was not found, clinically we are forced to assume that an encephalitis was present prior to the suppurative meningitis. This encephalitis seemed to be of infectious origin, but might have been secondary to the nephritic state. On admission, the blood nitrogen was within normal limits; but, as the disease progressed, the acute nephritis became manifest. No examinations were made within a month before the patient died, or undoubtedly the blood nitrogen would have been much higher. According to the pathologist, the chronic changes present in the kidneys did not seem sufficient to account for the nonprotein nitrogen retention, and the tubular nephritis present could have developed during the course of an acute infection.

Recently Dr. J. C. Yaskin of Philadelphia told me of one of his cases[7] in which the history and findings were typical of epidemic encephalitis, complicated by a severe nephritis. An internist of national reputation in consultation stated that the case was encephalitis and not uremia. A neurologist of just as high standing, when called in consultation, stated that although the history was that of epidemic encephalitis, he believed that the patient was suffering from uremia. The patient recovered from the acute illness, and now has a parkinsonian syndrome and a chronic nephritis.

Case 3 is interesting because it represents an early case of chronic nephritis, which, according to the history and by exclusion of other possible etiologic factors, was thought to have followed encephalitis.

6. This case may have been one of the type described by Bang (Norsk. Mag. f. Lægevidensk. **82**: 195 [March] 1921; abstr. J. A. M. A. **76**: 1376 [May 14] 1921) of aseptic purulent meningitis occurring in uremia which suggested focal brain lesions, but in which none were found at necropsy.

7. To be reported later.

CASE 3.—J. G., a colored man, aged 36, was admitted to the medical service of Dr. R. G. Torrey, June 25, 1923, because of swollen ankles and legs. The patient gave no other complaints. He stated that for some time he had noticed that his ankles were swollen in the morning on arising, but added that he had been getting up twice a night to void urine ever since a nervous breakdown in 1921. At that time he was a patient in the nervous wards of the hospital. On looking up the records, it was found that he was a patient in August, 1921, and in the spring of 1919 he became nervous, had severe headaches and pain in the neck, lacrimation, diplopia and strabismus, with insomnia. He gradually became better, but had a relapse in six months. He came to the hospital because of insomnia and what he thought was a stroke in the left arm, a loss of power and control of the finer movements of the hand (e. g., he could not play the piano well with the left hand) and tremors. He remained in the hospital only a few days. It was found at this time that he had sluggish pupils, tremulous tongue and lips, lacrimation, tremor of the left hand and overactive deep reflexes. He did not remain long enough to establish a definite diagnosis, but early general paralysis and neurasthenia were considered. In his early medical history he had measles, smallpox and chancroids, but never scarlet fever.

Examination.—In general appearance he was obese, had an ironed out, expressionless face, and all body movements and his gait were rigid and slow; rhythmic tremors were present in the left hand. One immediately received the impression of postencephalitic paralysis agitans. His behavior was childlike; he was untidy, silly, and at times insolent to the attendants and patients. The legs, thighs and lumbar regions were markedly edematous. The heart sounds were clear; the aortic second sound was accentuated; rhythm was regular and no murmurs were heard. The blood pressure was 175 systolic, and 110 diastolic. Neurologically, the patient showed masked facies and tremulous tongue. The muscle power of the left arm was diminished 25 per cent.; there were fine tremors of the left hand, with some incoordination and cogwheel resistance of this arm. The deep reflexes were slightly increased on the left side, but no Babinski sign was present. The patient was seen by Dr. D. J. McCarthy, who thought that, in view of the history and findings, he had suffered from an encephalitis and was left with a paralysis agitans residual.

The blood and spinal Wassermann tests were negative. The colloidal gold curve was 1112221000. The specific gravity of the urine was 1.020; it showed a heavy trace to a cloud of albumin, with many hyaline and granular casts. The phenolsulphonephthalein excretion was 20 per cent. the first hour and 12 per cent. the second, a total of 32 per cent. The urea nitrogen was 11 mg.; uric acid, 3.6 mg., and blood sugar, 90 mg. A twenty-four hour urine specimen showed a twelve hour night specimen of 780 c.c. with a specific gravity of 1.016; the day specimens totaled 1,600 c.c., with specific gravity 1.030.

The patient returned a month later with a similar edema; the blood pressure was systolic, 180; diastolic, 110. Three months later he was again admitted. His findings were as before: edema; urea, 15 mg.; uric acid, 5.8 mg.; urine, specific gravity from 1.007 to 1.011, with a trace of albumin. He again became troublesome, and was discharged.

This patient unquestionably had acute epidemic encephalitis followed by a relapse, and was left with a paralysis agitans residual. The findings of edema, elevation of diastolic and systolic pressure, low phenolsulphonephthalein output and increased night urinary output, with a lowering of the specific gravity and the absence of cardiac decompensation findings, justify a diagnosis of chronic diffuse nephritis. According to the history, and in the absence of other etiologic factors, it would seem probable that, during the acute stage of the encephalitis, kidney lesions had been produced which were permanent.

SUMMARY

Too few detailed pathologic studies of the viscera have been made in epidemic encephalitis to form a definite basis for concluding whether or not there are visceral complications in the disease. It is hoped that more attention will be given to this phase of the disease.

When detailed studies of the kidneys have been made, distinctly pathologic lesions have been found in a large percentage of cases, the lesions being of two types, vascular and tubular.

The two fatal cases of toxic infectious encephalitis (not epidemic), complicated by nephritis, illustrate the difficulties in differentiating epidemic encephalitis complicated with nephritis from chronic myoclonic uremia, clinically as well as pathologically. In both cases there was a low grade neuroretinitis. Spiller,[8] reports a case in which there were choked disks and a moderate nephritis, and states that nephritis is not an uncommon occurrence in the disease.

CONCLUSION

Epidemic encephalitis is in some cases complicated by an acute nephritis, which may make the differential diagnosis with myoclonic uremia exceedingly difficult. The history, duration, fairly uniform neurologic findings, with repeated blood nitrogen studies (in uremia, urea nitrogen being almost invariably high, in encephalitis, going up only with the progression of the disease) should in most instances clear up the diagnosis, but in some cases it may be impossible to decide.

The same bacterial cause of the infection in the central nervous system probably produces the kidney lesions. The prognosis is, of course, more grave in cases complicated by nephritis, and the treatment of the patient likewise altered. The possibility of nephritis occurring in acute encephalitis should be thought of and also that chronic nephritis may be a sequel. In seeking etiologic factors in the past medical history of chronic nephritides, it is suggested that inquiry be made for past encephalitic disease the same as we question our patients as to antecedent scarlatinal infection.

OLD FRACTURES OF THE ANKLE*

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Ankle fractures may be divided into four classes, characterized by (*a*) inversion (Fig. 1); (*b*) eversion (Fig. 2); (*c*) backward displacement of the astragalus on the tibia (Fig. 3), and (*d*) linear fractures, fractures without displacement and other unusual types.

While it is not my intention to describe at length these various types of fracture, I may say that the inversion type consists usually of a fracture of the internal malleolus and of the fibula, either at the styloid process or somewhat higher up, and that the astragalus is pushed toward the midline so that the foot appears in more or less inversion.

The eversion type, commonly known as Pott's fracture, consists of a tearing off of the ligaments attached to the internal malleolus, or of the malleolus itself and of the fibula from 1 to 3 inches above its lower end. It is characterized by eversion. This is the fracture described in 1779 by Percival Potts. Figure 4 is a copy of Potts' original illustration. The term "Pott's fracture" should be reserved for this variety of ankle fracture

8. Spiller, W. G.: High Grade Choked Disks in Epidemic Encephalitis, J. A. M. A. **80**: 1843 (June 23) 1923.

* Read before the Hennepin County Medical Society, Minneapolis, Jan. 9, 1924.

and not be indiscriminately used to describe any form of broken ankle.

The third type (that characterized by backward displacement of the astragalus) is the form of ankle fracture which seemingly calls for especial attention here. As will be shown later, this is the type of fracture most frequently overlooked, or not properly diagnosed and treated. It is characterized, as mentioned before, by a backward dislocation, or subluxation, of the astragalus on the tibia. In order to permit this backward displacement, a large or small fragment is usually torn off from the posterior part of the tibia and carried backward and upward with the astragalus at its lower end. The ligamentous structures connecting the astragalus and the avulsed fragment are undisturbed. This fracture has sometimes been termed drunkard's fracture. I believe it never was described better than by Cotton in his book on "Joint Fractures." In my own work, I am in the habit of calling this type of fracture Cotton's fracture.

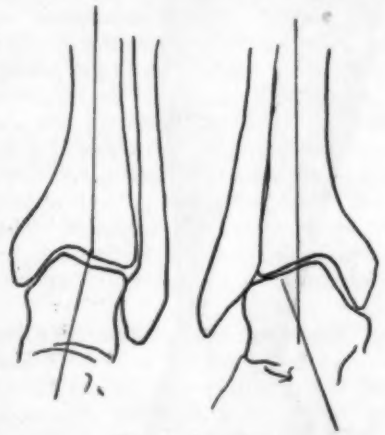

Fig. 1.—Inversion.

There are fractures that are atypical; for instance, when there exists no displacement whatever (linear fractures), or when a small chip of bone is extruded into the joint.

The type of case seen in the office of the orthopedic surgeon differs materially from that seen in the practice of general surgery. The orthopedic surgeon, as a rule, sees the fracture when it is old and after it has been treated elsewhere, and it is one of my objects here to state the reasons for this.

In the treatment of fresh cases, it is above all necessary to get the astragalus into absolutely correct alinement with the bones of the leg. Viewed from the front, a line drawn parallel to the long axis of the tibia should bisect the astragalus. An anesthetic should be given after roentgenograms have been carefully taken. Roentgenograms should be made of both ankles in the anteroposterior, as well as the lateral, position. One cannot too much commend the liberal use of the roentgen ray, both before and after "setting" fractures of the ankle. I believe that no single cause is oftener at the bottom of failure in treatment of these fractures than lack of frequent and thorough roentgen-ray examination.

Stability is necessary in order to permit weight bearing. The astragalus is located in a fork made up of the two bones of the leg and the astragalus, so that while dorsiflexion and plantar flexion are free, lateral mobility is normally absent. Any abnormal mobility of the ankle, or deviation of the astragalus from the center line, will result in a weak and painful ankle.

It will be found that in nearly all types of fracture there will be a tendency to equinus; that the Achilles tendon will tend to shorten. This shortening must not be allowed to occur. The foot must be held at a right angle to the leg, and the surgeon must be willing (if all other means have failed) even to divide the Achilles tendon in order to bring the foot to the desired right angle.

In the after-treatment of these fractures, the value of physiotherapy must be appreciated. As will be seen later, a number of the old cases were seen because physiotherapeutic measures had not been used in the following up of an otherwise well treated case of ankle fracture.

In this series, which comprised thirty-five consecutive cases of old ankle fracture seen during five years, nearly all ages were represented, as were both sexes. The patients reported at various lengths of time following the fracture: six months, six; one year, eleven; two and three years, five each; four years, two; five, seven, eight and nine years, one each; ten years, two.

COMPLAINTS

The patients almost invariably told the same story. They all suffered pain in the ankle joint and the foot. Pain was increased on use. Swelling occurred in a large number of cases, especially after use. About half the patients used canes. Four were using crutches. Their walking capacity was distinctly limited by the pain. There was more or less stiffness at the ankle. In some of the cases, rigidity was the chief symptom complained of. All of the patients limped, some in mild and some in extremely marked degree. Weakness was another symptom frequently complained of. A few of the patients complained of back pain as a result of the abnormal strain put on the structures of the back. In some cases, there was marked shortening of the Achilles tendon, which caused the patient to put undue pressure on the heads of the metatarsals. Nearly all the patients were more or less unable to follow their previous occupations. They came, therefore, for disability caused by pain, stiffness and swelling of the ankle joint; disability which was great enough to interfere seriously with their usual occupation.

It may be said that, in the thirteen cases, the treatment previously accorded was absolutely adequate. In twenty-two cases, however, I believe the term "inadequate" can be applied. In this connection, let me hasten to add that I do not know what percentage of ankle fractures this series of old cases represents—let us hope it is a very small percentage and that ankle fractures, as usually seen and treated, do not appear later somewhere else for further treatment!

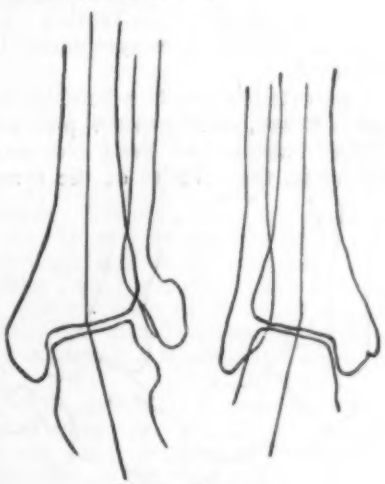

Fig. 2.—Eversion.

The cases were thus divided: inversion type, six cases; eversion type, fourteen; backward displacement, eleven; atypical, four.

ATROPHY

In eight of these cases, the pain was chiefly due to bone atrophy. It is not generally known that bone atrophy may be the predominating cause of pain for a long time after a fracture, especially in the lower extremities. We must suspect it at any time when

alinement is good and the fracture seems otherwise to be progressing nicely, but still remains markedly painful. The roentgen ray readily reveals bone atrophy.

The prevention and treatment of bone atrophy consists of vigorous massage and the use of the leg and other physiotherapeutic means.

In three cases, pain was due to secondary arthritis in the ankle joint. Here, the treatment had been absolutely adequate but a secondary post-traumatic arthritis had supervened.

MALALINEMENT

In seventeen cases, pain was chiefly due to malalinement; that is to say, the astragalus was not placed directly under the tibia, and therefore function was materially interfered with and pain ensued. I believe that in nearly every one of these seventeen cases good alinement could have been achieved when the ankle fracture was fresh. The inversion and eversion types of fractures have been correctly treated for a long time, and the disability that follows malalinement due to inversion or eversion has been correctly appreciated for many years.

The type of case that still misses proper attention in an entirely too large number of cases is that characterized by backward displacement. Eight patients had no roentgenograms made at any time. In these eight cases, the presence of backward displacement was not suspected, the diagnosis of "sprain" having been made. If the fracture is allowed to heal with the astragalus displaced backward, great disability will always ensue. It may be said that the patients of this series who had the most disability were those suffering from old, unreduced backward displacement.

There was a marked shortening of the Achilles tendon in fourteen. In three cases, the pain complained of was under the heads of the metatarsals. The shortened Achilles tendon held the foot in a position of equinus, and the front portion of the foot got more than its share of weight bearing. In these cases, it was easy to relieve the symptoms by lengthening the heel cord.

Pain often is due to a combination of these factors; that is to say, malalinement, plus atrophy, plus rigidity.

The treatment of these old cases must, of course, depend on the severity of the symptoms and the type

Fig. 3.—Backward displacement.

of deformity with which we are dealing. In those cases characterized by pes equinus due to the shortened Achilles tendon, lengthening of the heel cord will sometimes suffice to convert an uncomfortable, painful ankle to the opposite. In cases of post-traumatic arthritis, the situation is different. In one of these cases, the pain was so severe that arthrodesis was necessary. In two cases, an ankle brace limiting motion to a greater or less degree seemed to give enough relief. The cases of malalinement due to inversion and eversion can be fairly easily handled by means of supramalleolar osteotomy. This was done in nine cases of this series with apparent favorable results in all. Backward displacement is difficult and unsatisfactory to treat. It is practically impossible to reduce the subluxation present and to hold

Fig. 4.—Pott's original illustration of the eversion type of ankle fracture (from "The Chirurgical Works of Percivall Pott," London, 1779).

it reduced, even if we refracture the tibia at the original site of fracture. In four cases, I have performed arthrodesis on this type of fracture for the relief of pain. It may not be unwise to remark at this point that, in the fresh state, this fracture is easy to treat, and proper treatment is followed by very favorable results.

CONCLUSIONS

It is absolutely necessary to make liberal use of the roentgen ray in the treatment of ankle fractures, both before and after so-called setting.

It is necessary to recognize that type of backward fracture dislocation of the ankle described in this paper. When fresh, it is easy to treat; when old, it is a bête noire.

Correct alinement of the bones comprising the ankle joint is necessary in order to prevent later disability.

Thorough and efficient after-treatment by massage, hot applications, and active and passive motion are necessary.

It should be remembered that in these cases the Achilles tendon will shorten if it is not watched. In all ankle fractures, no matter of what type, the foot must be held at right angles with the leg.

704 Besse Building.

PHAGOCYTOSIS OF ERYTHROCYTES IN PERNICIOUS ANEMIA

PRELIMINARY NOTE *

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AND
G. O. BROUN, M.D.
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It has been generally assumed by recent investigators that pernicious anemia is associated with an extensive destruction of red blood corpuscles, and certain features of the disease, such as the high bilirubin content of the serum, which manifests itself in the characteristic yellow tint of the skin and conjunctivae, support such a view strongly. As it is obvious that an understanding of the mechanism of this blood destruction would be an important step in advancing our knowledge of this mysterious disease, many attempts have been made to discover the nature of the underlying process. Up to the present, however, there appears to be no commonly accepted explanation.

The subject has been approached most frequently by attempts to find hemolytic toxins in the blood serum or to determine alterations in the fragility of the erythrocytes, but the results in these fields have not proved to be definitely significant. It has therefore been of considerable interest to us to find in a group of typical cases of pernicious anemia, which we have studied during the last year and a half, an entirely different process, and one which is so extensive that it must account for a very considerable amount of blood destruction. This process is the phagocytosis of erythrocytes by endothelial cells. It has been observed by pathologists since the earliest descriptions were made of the histologic changes in pernicious anemia, but comparatively little attention has been paid to its extent and to its possible relation to the mechanism of blood destruction. It has been found to occur in the spleen, liver, lymph glands, hemolymph glands, and bone marrow, but our observations indicate that it is a much more important process in the bone marrow than it is elsewhere.

It is perhaps noteworthy that active bone marrow is more widely distributed in this disease than it is under normal conditions. Whether the phagocytosis of red blood corpuscles is of sufficient degree to account for the blood destruction in pernicious anemia completely, it is not possible to state at present; but the process is certainly so marked that it merits more attention than has hitherto been paid to it by hematologists. Further clinical, pathologic and experimental studies are being carried on, and will be reported in detail in the future. Meanwhile, the subject has seemed to us to be of sufficient interest and importance to justify this preliminary note.

* From the Boston City Hospital.

Fallacy of Pluriglandular Organotherapy.—The specious theory that we can supply the human body with any quantity or quality of endocrines, the internal coordination being so perfect that the body cells pick out only the kind and quantity of hormones needed, is not only without basis in demonstrated facts, but is in some instances (as the thyroid, and possibly the hypophysis and pancreas) definitely contradicted. The fact that most of the endocrine products are more or less inert when taken by mouth probably explains much of the success of the pluriglandular therapy in the hands of the uncritical. —Carlson, A. J.: *Proc. Inst. Med. Chicago* **4**:208, 1923.

Clinical Notes, Suggestions, and New Instruments

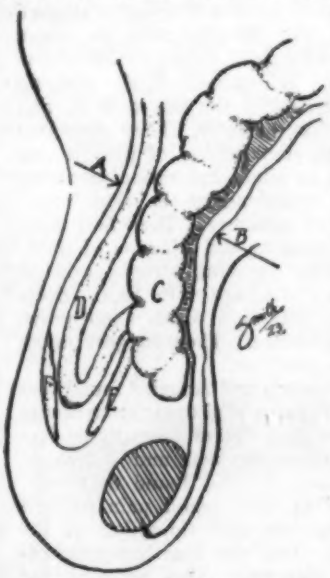
STRANGULATED SLIDING HERNIA *

WILLIAM RANDOLPH SMITH, A.B., M.D., ATLANTA, GA.

Strangulation of a sliding hernia appears to be very rare. In fact, I have been unable to find any cases of this condition reported in the literature, and a nationally known authority on the subject, who sees a vast amount of hernia work at the Hospital for the Ruptured and Crippled in New York, recently told me that he cannot recall ever having seen or heard of a case.

REPORT OF CASE

History.—A negro, aged 29, whose family and past histories were irrelevant except in relation to the local condition, had been forced to lift a heavy load when 6 years of age. This had resulted in a bilateral inguinal hernia, for the relief of which he had since worn a truss. At times, when straining, he could feel his "ruptures" slide down into the scrotum. At other times they protruded without his noticing it, and his attention was directed to the fact by a dull, aching sensation in the region of the scrotum. He had always been able to reduce the hernias, however, without much difficulty.



Strangulated sliding hernia; *A B*, level of external ring; *C*, cecum; *D*, ileum; *E*, appendix; *F*, sacculation in wall of sac.

On the day of admission to the hospital he had been unusually active, and had worked until nearly 9 p. m., at which time he felt a rather sharp pain in the right part of the scrotum. He went home and to bed, and attempted to reduce the hernias. He was unable to reduce the right side. Meanwhile, the pain was steadily growing worse. The patient said afterward that the sensation was as though some one were cutting off the hernia with a sharp knife. In a short time he noted a sensation of excessive heat, following which he began to perspire very freely. The pain, which continued to grow more severe, seemed to travel down the right leg, and to extend upward over the lower part of the abdomen. The abdominal pains soon became cramplike in character, and about one and one-half hours from the onset of the symptoms, he vomited. During the following thirty minutes, he vomited several times. Finally he summoned help, and was brought to the hospital.

Physical Examination.—The patient was in moderate shock, with what appeared to be a rather large, strangulated inguinal hernia on the right side, and a large, easily reducible inguinal hernia on the left. The mass on the right side was about 5 inches in diameter, tense, and very tender. He received a 1,500 unit dose of antitetanic serum (a medication that in this condition is given as a routine in this clinic), one-quarter grain of morphin, and an ice cap over the right inguinal region for twenty minutes, after which taxis was tried without success. Immediate operation was therefore decided on. Operation was started three hours after the onset of the first symptom.

Operation and Result.—The operative findings proved to be of more than usual interest. The constriction, as is usually the case in strangulated hernias, was at the external ring. The hernia proved to be a sliding hernia of the cecum, involving also several loops of ileum and an exceptionally long

* From the Department of Surgery, Emory University School of Medicine.

appendix. The latter structure was firmly adherent to the wall of the sac, was thickened, and was deeply injected. The loops of intestine were edematous, dark and somewhat purple, but gave every evidence of being viable. The sac contained a moderate amount of blood-tinged fluid. There was a small cyst in the sac wall, which contained about an ounce of clear fluid. The appendix was removed and the hernia repaired, a modified Bassini technic being employed, with transplantation of the cord. A portion of the rectus was used in completing the repair. The unusual point in this case was the strangulation of the cecum and appendix.

The patient developed a small abscess in the lower part of the scrotum, which was incised and drained and healed promptly. Otherwise his recovery was uneventful.

746 Peachtree Street.

LOCAL ANAPHYLAXIS FOLLOWING INJECTION OF INSULIN *

MILLS STURTEVANT, M.D., NEW YORK

Discussing the local reaction of insulin, Banting, Campbell and Fletcher[1] warn against the intramuscular injection, saying that this adds to the subsequent pain and tenderness and is sometimes followed by induration. Early stinging effects of the extract were ascribed to the salt content, and removal of the salt overcame that difficulty. They state that tenderness varies with different preparations of insulin, and that at its worst it is confined to slight induration involving the subcutaneous tissue, with reddening of the skin immediately surrounding the point of puncture. They find these effects not so great as those following the injection of pituitary extract, caffein, theophyllin, digitalin, strophanthin or camphor, and that they do not compare with local effects from doses of vaccines. They note that there is no active pain, merely a tenderness to pressure. They suggest injection of areas not subjected to pressure.

Wilder, Boothby, Barborka, Kitchen and Adams[2] found that with injections requiring 5 c.c. or more, slight pain often occurs and may be followed during the next twelve hours by moderate induration of the part, with some heat and throbbing. From repeated injections into one site they found that induration occasionally results. This they found painless and usually harmless, although necrosis and sloughing of the skin occurred in a few instances. This was usually a punched-out ulcer less than 10 mm. in diameter. They believed that this was due to the tricresol used as a preservative.

Joslin[3] finds that the pain of an insulin injection is slight. In his experience only four abscesses have resulted. He speaks of insulin burns due to injection into the superficial layers of the skin, and ascribes them to tricresol.

The case here reported is an exception to the usual experience.

REPORT OF CASE

A woman, aged 65, whose mother and a maternal aunt had had diabetes, the daughter of a second maternal aunt having had diabetes, had been known to have diabetes for eight years. For the first three years she had very little supervision. Since 1919 she had been under fairly continuous direction. Occasional lapses had necessitated a redetermination of tolerance. Oct. 12, 1923, following three months of careless dieting, she passed about 2 per cent. of glucose in the urine. The blood sugar was 0.280 per cent. Her height was 1,673 mm. and her normal weight was 63 kg. She was given a diet of 75 gm. of protein, 160 gm. of fat, and 55 gm. of carbohydrate in twenty-four hours. With this she was glucose free on two doses of insulin a day, 20 units before breakfast and 10 units before dinner, the blood sugar falling to 0.147 per cent.

The injections of insulin were made carefully, into the subcutaneous tissue, with a sharp needle, under strict antiseptic precautions. The amount of one injection did not exceed 1 c.c. in bulk. With the first and subsequent injections for about six weeks she developed a hard, painful nodule, similar to those felt after injection of typhoid vaccine, from 1.5 to 2 cm. in diameter. Over this, involving the skin, was an area irregularly rounded, 6 or 7 cm. in diameter, hot to touch, hard and red, with slightly raised edges. This phenomenon lasted about seventy-two hours, and then gradually went away. This was so severe as to lead to consideration of the advisability of discontinuing the treatment. During the first week in December, however, the reactions began to diminish and within a few days became so slight as no longer to be of much annoyance.

COMMENT

It is suggested that the reaction was due to local anaphylaxis. The appearance was similar to the local reaction with horse serum and diphtheria antitoxin in susceptible persons. No infection occurred. There was no necrosis or sloughing. After about forty-five days, the reaction quickly stopped, as if desensitization had been accomplished.

The case is reported since it holds out hope that in other, similar, exceptional cases cessation of reaction will come.

955 Park Avenue.

AGGLUTINATION IN GONOCOCCUS INFECTION WITH CONCENTRATED SERUM *

RUSSELL D. HERROLD, M.D., CHICAGO

The serum of patients with gonococcus infection does not contain, as a rule, agglutinins in sufficient quantity to make the agglutination test of any practical value as an aid in diagnosis. I[1] have found that the arachnoid fluid and serum of syphilitic patients give a more sensitive test when concentrated. The euglobulin and lower pseudoglobulins, obtained by adding saturated solution of ammonium sulphate to the serum, were redissolved in physiologic sodium chlorid solution in a fractional quantity of the original serum. This method of concentration was applied to two antigonococcus rabbit serums made by injecting the Torrey and Buckell[2] gonococcus Strain 34, which has been found to be one of the most widely generalized strains of gonococcus as classified by agglutination and absorption, since it gave clear-cut absorption of agglutinin from twenty-four of twenty-seven monovalent antigonococcus serums. The results of concentration of these two antigonococcus serums are given in Table 1. The mixture of 2 c.c. of serum and 1.2 c.c. of a saturated solution of ammonium sulphate, after standing at room temperature for one-half hour, was centrifugated at high speed, the supernatant fluid removed, and the precipitate redissolved in 0.4 c.c. of physiologic sodium chlorid solution. Agglutination occurred in the concentrated serum in a dilution five times greater than with the original serum. The control tests of staphylococcus and *B. coli* with concentrated and nonconcentrated serums were negative, and normal rabbit serum, concentrated and nonconcentrated, did not agglutinate the gonococcus, staphylococcus or *B. coli* suspensions. The mixtures of serum and bacterial suspensions were incubated between 53 and 56 C., and readings were made at the end of four hours. Occasionally the suspension, when partially cleared, would form a homogeneous suspension on shaking, but in real agglutination flocculi remained in the suspension after shaking. Agglutination occurred earlier, as a rule, in the concentrated serum than in the nonconcentrated, which seems to indicate that the higher pseudoglobulins and albumins delayed the action of the agglutinins contained in the whole serum.

A series of 112 serums from various stages of complicated and uncomplicated gonococcus infections in male and female

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* From the Department of Medicine, the University and Bellevue Hospital Medical College.

1. Banting, F. G.; Campbell, W. R., and Fletcher, A. A.: Insulin in the Treatment of Diabetes Mellitus, J. Metabol. Res. **2**: 547 (Nov.-Dec.) 1922.

2. Wilder, R. M.; Boothby, W. M.; Barborka, C. J.; Kitchen, H. D., and Adams, S. F.: Clinical Observations on Insulin, J. Metabol. Res. **2**: 701 (Nov.-Dec.) 1922.

3. Joslin, E. P.: The Treatment of Diabetes Mellitus, Philadelphia, Lee & Febiger, 1923, p. 64.

* From the John McCormick Institute for Infectious Diseases.

1. Herrold, R. D.: The Precipitation Test for Syphilis of Concentrated Arachnoid Fluid and Serum, J. A. M. A. **81**: 203-206 (July 21) 1923.

2. Torrey, J. C., and Buckell, G. T.: A Serological Study of the Gonococcus Group, J. Immunol. **7**: 305-359 (July) 1922.

patients were then tested for agglutination after concentration of the serum, parallel gonococcus complement fixation tests being made to study the value of agglutination as a substitute for the more complicated fixation test. The result of this series is presented in Table 2. We see that serums giving strongly positive complement fixation also caused complete agglutination of the gonococcus, and that the serums giving no fixation also failed to agglutinate. The agglutination was considered partial when the clearing of the mixture was not complete, but on shaking, distinct clumps were seen in the suspension macroscopically. Two serums with a plus minus and negative fixation test agglutinated completely, but contained natural amboceptor, which possibly influenced the fixation test. Three serums, known to be negative, gave plus and plus minus fixation but no agglutination. Two of these patients were

TABLE 1.—*Agglutination with Concentrated and Nonconcentrated Antigonococcus and Normal Rabbit Serum*

	Agglutination of Gonococcus 34 with Varying Dilutions of Serum									
Serum	10	100	200	400	800	1,200	1,400	3,000	4,000	5,000
Antigonococcus Rabbit 1.....	+	+	+	0	0	0	0	0	0	0
Antigonococcus Rabbit 1, concentrated.....	+	+	+	+	+	+—	0	0	0	0
Antigonococcus Rabbit 2.....	+	+	+	+	+	0	0	0	0	0
Antigonococcus Rabbit 2, concentrated.....	+	+	+	+	+	+	+	+	+	0
Normal rabbit.....	0	0								
Normal rabbit, concentrated.....	0	0								

boys under 10 years of age. This seems to indicate that the complement fixation in low degree may sometime be nonspecific in nature. Anticomplementary serums that are unsuited for fixation tests can be used for agglutination.

Comparative tests with the two antigonococcus serums were made with suspensions of fresh cultures of gonococci and suspensions from old stock strains to determine whether stock cultures may be used, since frequently it is not convenient for small laboratories to keep the gonococcus constantly alive for serologic purposes. The stock supply was made from heavy transplants of Gonococcus 34 on ascites phosphate agar plates. Twenty-four or forty-eight hour

TABLE 2.—*Comparison of Fixation and Agglutination Tests of Gonococci*

Number of Serums	Results of Fixation Tests	Results of Agglutination Tests		
		Complete	Partial	Negative
32.....	++++	32	0	0
15.....	+++	13	1	1
16.....	++	11	4	1
13.....	+	4	6	3
3.....	+—	1	1	1
29.....	0	2	5	22
4.....Anticomplementary		2	2	0

growths were suspended in salt solution, immediately centrifugated, the supernatant fluid poured off and the packed, moist gonococci kept in stoppered tubes until used. These packed gonococci were taken up with a platinum loop and suspended in salt solution just before use. Tests at intervals of four months were as satisfactory as with suspensions of fresh cultures. Fresh and old suspension were also equally reliable for concentrated agglutination, as indicated in tests with twenty-five serums from patients in the latter part of the series.

CONCLUSIONS

Agglutination after concentration of the serum in gonococcus infection is a reliable substitute for the fixation test.

The use of old cultures of packed gonococci for suspension, and the simple equipment needed for the agglutination tests, make it available for small laboratories or even for office tests.

7 West Madison Street.

TRANSILLUMINATION OF THE VESICOVAGINAL SEPTUM

GEORGE M. LAWS, M.D., PHILADELPHIA

The ease with which the base of the female bladder can be transilluminated prompts me to call attention to the method. With an electrically lighted cystoscope, in the fluid filled bladder, the perineum is retracted with a Sims speculum, and the room is darkened. The lamp is carried close to the base of the bladder, and therefore an instrument of the "convex" type is preferable; but if one also wishes to palpate the structures between the beak of the cystoscope, using it as a sound, and a finger in the vagina, then the "concave" cystoscope should be selected.

The procedure has occasionally been found helpful: (*a*) in orientation, for example, by easily locating on one side of the septum a point readily visible on the other side, such as the orifice of a small vesicovaginal fistula; and (*b*) in seeing the relative thickness of the intervening tissues, for example, in cystocele, suburethral cyst and malignant infiltration of the anterior vaginal wall.

2033 Locust Street.

THE ORTHOPEDIC TREATMENT OF SYMPTOMATIC SCIATICA

PHILIP LEWIN, M.D., CHICAGO
Attending Orthopedic Surgeon, Cook County Hospital; Junior Attending Orthopedic Surgeon, St. Luke's Hospital; Assistant Professor of Orthopedic Surgery, Northwestern University Medical School

The orthopedic treatment of symptomatic sciatica consists of:

1. Absolute rest in bed, the patient not being allowed to go to meals or to the lavatory.

2. Back strapping, moleskin adhesive plaster being applied very tightly across the lumbar, sacral and iliac regions (Fig. 1).

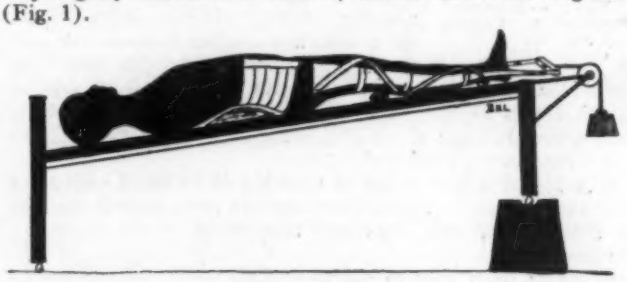


Fig. 1.—Application of leg traction and strapping of lumbo-sacro-iliac region.

3. Leg traction, adhesive resin plaster on swansdown being used.

Two wide strips are used, *A* and *B*. The leg should be shaved.

A. On the outer border of the leg from the great trochanter down to a point 5 inches below the sole of the foot.

B. On the inner border from the perineum to a point 5 inches below the sole of the foot.

C. Two strips, three fourths inch wide, beginning above the ankle, making oblique turns at an angle of about 45 degrees, crossing as follows: (1) in front, about 3 inches above the ankle joint; (2) behind, just above the prominence of the gastrocnemius muscle; (3) in front, about 3 inches above the patella.

D. Three circular turns 1 inch wide extending two thirds of the circumference of the limb at the points where the strips of *C* cross.

E. A flannel bandage is applied, beginning around the malleoli, making two turns while the two long adhesive strips of (3) *A* and *B* are reflected. This protects the malleoli from irritation by the adhesive plaster. The two strips are then pulled down over the flannel bandage, and the latter is continuously applied to the entire limb. Two running stitches lengthwise of the inner and outer borders of the limb secure the flannel to the heavy adhesive and hold everything in position.

4. A flannel bandage figure-of-eight spica of the hip is applied on the affected side. This should be voluminous and include the region from the costal margin to the midthigh. It should be very snugly applied.

5. An electric pad is placed over the sacral and hip areas, or an electric bed cabinet may be used.

6. A small roll of blanket material is placed under the knee to maintain 10 degrees of flexion to relieve the tension on the hamstrings, triceps and capsule of the joint. Another roll of blanket material is placed just above the heel to prevent pressure. This is to be 12 inches wide and pinned to the sheet.

Fig. 2. — Plaster-of-Paris spica of right hip and leg.

(*a*) The foot of the bed is elevated about 8 inches so that the patient's body will act as countertraction.

(*b*) The traction must be in the long axis of the femur and tibia.

(*c*) There must be full play of the rope and spreader and no friction by the bedclothes.

(*d*) Foot drop must not be permitted.

(*e*) A cradle is used to prevent the bedclothes from touching the toes.

(*f*) About 7 to 10 pounds weight should be applied at first. The patient can stand more weight during the daytime than at night.

(*g*) The malleoli and heel should be watched for pressure.

7. When all pain and sensitiveness disappear, a plaster-of-Paris spica cast extending from the costal margin to below the knee should be applied (Fig. 2). One must be careful to protect, by means of felt pads, the iliac crests, the patella and the sacrum. (If bilateral, a double spica with a cross bar is necessary and the patient should remain in bed. He should be on a Bradford frame, the ends of which are on 8 inch blocks so that he will not be disturbed when the bedpan is used.)

8. Crutches are employed.

9. A 1½ or 2 inch wood or cork lift is attached under the heel and sole of the shoe of the opposite side, so that the foot of the affected side does not touch the ground.

10. After from four to six weeks, a sacro-iliac belt[1] with thigh "pants" and a lumbosacro-iliac pad should be worn instead of the cast (Fig. 3).

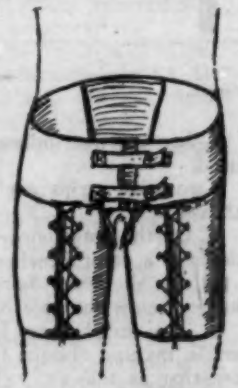


Fig. 3. — Sacro-iliac belt with thigh "pants"; type recommended by W. B. Owen.

11. Where more support than the sacro-iliac belt is needed, a front lace corset[2] with U band and uprights of steel, or a spine brace with a U band, should be worn.

I have treated and assisted in the treatment of about fifty cases of symptomatic sciatica during the last eight years. The great majority were patients of Dr. John L. Porter. Most of the cases were lumbar or lumbosacro-iliac ostearthritis, and the results have been very satisfactory. One typical illustrative case was as follows:

A physician whose pain was so severe that he requested section of the nerve roots (rhizotomy) was taking morphin hypodermically without relief. The treatment outlined was instituted, and small doses of salicylates were administered by Dr. Joseph L. Miller. In four days his pain could not be reproduced. After one week of bed treatment, a single spica cast was applied; crutches and a shoe-block enabled the patient to walk. The cast was removed in six weeks; and while it is true that the patient avoids certain acts which formerly were very painful, viz., playing golf and lifting heavy objects, he has made practically a complete recovery.

7 West Madison Street.

1. Owen, W. B.: An Efficient Support for Sacro-Iliac Relaxation, J. A. M. A. **71**: 1112 (Oct. 5) 1918.
2. Porter, J. L., and Lewin, Philip: A Special Corset for Some Back Conditions, J. A. M. A. **82**: 32 (Jan. 5) 1924.

CASE OF SOLITARY TUBERCULOUS ULCER OF THE LIP

G. T. MACPHERSON, M.D., AND H. W. GREGG, M.A., M.D., BUTTE, MONT.

Tuberculous ulcer of the lip is perhaps the most rare of all the types of oral tuberculosis. There are two types recognized: (1) the solitary ulcer beginning on the lip itself, and (2) ulcerated areas secondary to mucous membrane lesions of the buccal cavity, or to tuberculous lesions of the skin of the face such as we see in lupus. Of these two types, the former is the more rare. The diagnosis is difficult and must be made differentially, with chancre and epithelioma in mind. Occasionally the lesion is mixed tuberculous and syphilitic. With these facts in mind, we felt that such a case as the present should be reported.

REPORT OF CASE

A miner, aged 26, came to the dispensary in March, 1923, complaining of a chronic sore on the lower lip. He had been drifting from camp to camp, and his social history and the nature of the lip ulceration led us to suspect that the condition might be syphilitic. The patient said that in December, 1922, while eating, he had bitten his lip. Several days later, after the wound from the tooth had almost healed, he noticed that it again broke down and this time showed no tendency to heal. In fact, it had become larger. The ulcer was half way between the center of the lip and the angle of the mouth, about 1.3 cm. in diameter, almost round, and involved about one-half skin and one-half mucous membrane. The edges were thickened and raised, with some tendency to undermining. The base was considerably indurated, and around the ulcer the skin and mucous membrane were inflamed and infiltrated. The submaxillary and submental lymph glands were somewhat enlarged, but there was no generalized adenitis. There was no other ulceration about the mouth, tongue or throat. The ulcer was fairly deep, and had been rather painful for the last two weeks. As he came during regular mine clinic hours, no general examination was made at this time; but he was sent to the laboratory for dark field illumination of serum from the ulcer, and for a Wassermann test. The dark field was negative for spirochetes, and the Wassermann test (Kolmer technic) was negative. The patient admitted exposure, but stated that he had not had a venereal infection.

Two days later he was admitted to the hospital. The family and past history were not noteworthy until the last year. In this time he had had frequent colds, a chronic cough, more persistent in the morning, shortness of breath, considerable expectoration of thick, yellow, tenacious sputum, occasional night sweats for the last five months, and a history of slight hemoptysis four months before admission. His appetite had been poor for the last eight months, and he became fatigued very easily, although he kept on working. He had used alcohol ("moonshine") heavily during the last year, and had smoked to excess. He weighed about 160 pounds (73 kg.) and thought that he had neither lost nor gained. There was no history of secondary syphilis, and no signs were present at this time. He was well nourished and of fairly good color; his teeth were good; the tonsils were normal, and the tongue was heavily coated. The chest was symmetrical, with movement somewhat diminished on the left. Resonance was dulled over the upper left chest, and there was fine crepitation over the left apex. The heart, abdomen, genitalia and nervous system were normal. A roentgen-ray examination of the chest showed marked fairly large nodulations throughout both lungs, and definite increase in both hilum shadows, with irradiation in the upper left. The diagnosis was: effect of possible third stage of silicosis with tuberculosis. The urine was normal; the sputum was yellow,

thick and purulent, and showed about ten tubercle bacilli to the oil immersion field. In the absence of evidence of a syphilitic nature in the ulcer it was felt that the diagnosis probably lay between an epithelioma and a tuberculous lesion, with the probabilities being in favor of the former, even considering the patient's age.

March 14, under a local anesthetic, a wedge-shaped section of the lower lip, including the ulcer, and with its lines well outside the ulcer edges, was removed. The edges of the ulcer were hard, indurated and raised, with some tendency to breaking down in the center. Microscopic examination revealed the epithelium denuded in the ulcerated area: marked small round cell and eosinophilic infiltration; a large number of polymorphonuclear neutrophils near the surface, and several definite epithelioid tubercles present just under the surface, some of the tubercles containing large epithelioid giant cells with eccentric neuclei. The diagnosis was: tuberculous ulcer.

The operative wound healed nicely in the usual time. The most probable source of this ulcer was infection from the sputum developing in a sore made by the patient's biting the lip. He came to the clinic on account of the lip lesion, not realizing that he had tuberculosis, though he had recently had well marked symptoms of pulmonary disease. The diagnostic features ordinarily connected with tuberculous ulcer of the oral cavity, namely, the shallowness, granulation, red and yellow elevations, and irregular but not elevated or indurated margins, were not definite in this case. The ulcer was fairly deep and the edges were rather definitely regular and indurated, and the infiltration extended for some distance around the ulcer.

COMMENT

Although guinea-pig inoculation of the tissue was not made, we felt that a primary lesion was rather well ruled out by the absence of secondaries, though the lesion had persisted for three months; the negative dark field and Wassermann test and the microscopic picture itself, which showed typical tubercles with epithelioid cells, round cell infiltration, and giant cells with eccentric nuclei, and that we were justified in making a diagnosis of tuberculous ulcer.

KNOTTING OF DUODENAL TUBE DURING BILIARY DRAINAGE

GEORGE M. NILES, M.D., ATLANTA, GA.

The knotting of a duodenal tube during biliary drainage, as reported by Dr. Russell S. Boles[1] of Philadelphia, happened once under my observation. After the duodenal tube was supposedly in place, the injection of magnesium sulphate was made with great difficulty, there was no return flow of bile, and the patient felt a sense of discomfort. Therefore I withdrew the tube, which required considerable effort, and I found the distal end, about 6 inches from the metal tip, tied in a knot. A new tube was introduced, and after that the drainage was satisfactory.

922 Candler Building.

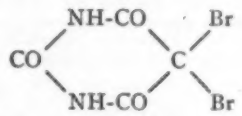
1. Boles, R. S.: Knotting of Duodenal Tube During Biliary Drainage, J. A. M. A. **82**: 303 (Jan. 26) 1924.

Standardizing the Hormone.—The physiologically important hormone stored in the gland must be sufficiently stable to resist the necessary chemical processes of making the gland extract; and, for practical organotherapy, the hormone must resist the action of the digestive enzymes and must be absorbed into the blood in active form. The hormone must be present in the gland in active form; be activated by the chemical processes of preparing the extract, or the normal activator added to the gland or the extract. The hormones must be relatively stable in the form in which the gland or gland extract is put on the market for therapeutic purposes; and the organ preparations must, so far as possible, be chemically and physiologically standardized.—Carlson, A. J.: *Proc. Inst. Med. Chicago* **4**:201, 1923.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIBROMIN.—Dibromobarbituric Acid.—Dibromomalonylureide.



Actions and Uses.—Dibromin is an antiseptic and germicide proposed for use in solution as in irrigating fluid and wet dressings for flushing cavities, irrigating infected wounds and for saturating gauze packing. Dibromin is claimed to be practically free from irritating or toxic properties in the concentrations required for therapeutic use.

Dosage.—To determine the strength of dibromin solutions which may be safely used on an individual without producing irritation, it is advised to begin with solutions of 1:10,000 (6 grains to one gallon) and then to gradually increase the concentration.

Manufactured by Parke, Davis & Co., Detroit. U. S. patent applied for. U. S. trademark 158,277.

Dibromin Capsules 6 grains.

Dibromin occurs as a crystalline, colorless powder; almost odorless; taste slightly astringent. It melts with decomposition at about 150 C. One part of dibromin dissolves in about 33 parts of water; soluble in ether, glycerin and alcohol; insoluble in fixed oils. The dry salt is permanent, but aqueous solutions decompose slowly. It is decomposed by alkalis, reducing agents and most organic substances.

Heat about 0.25 Gm. of dibromin to 160 C.; bromine is evolved. Heat about 0.25 Gm. dibromin with an aqueous solution of sodium carbonate; the odor of bromoform develops.

Dissolve about 0.1 Gm. of dibromin, accurately weighed, in about 20 Cc. of water, add 20 Cc. potassium iodid solution and an excess of diluted sulphuric acid. After one minute determine the liberated iodine by titration with tenth normal sodium thiosulphate. Iodine liberated corresponds to not less than 54.8 per cent. of bromine. This corresponds to not less than 98 per cent. of dibromobarbituric acid.

ACNE VACCINE (See New and Nonofficial Remedies, 1923, p. 302).

United States Standard Products Company, Woodworth, Wis.

Acne Vaccine.—Marketed in packages of one 10 cubic centimeter vial, each cubic centimeter containing 40 million killed bacteria, suspended in physiological solution of sodium chloride and preserved with 0.5 per cent. phenol.

GONOCOCCUS VACCINE (See New and Nonofficial Remedies, 1923, p. 304).

United States Standard Products Company, Woodworth, Wis.

Gonococcus Vaccine.—Marketed in packages of one 10 cubic centimeter vial, each cubic centimeter containing 1,000 million killed gonococci, suspended in physiological solution of sodium chloride and preserved with 0.5 per cent. cresol.

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1923, p. 306).

United States Standard Products Company, Woodworth, Wis.

Pertussis (Whooping Cough) Vaccine.—Marketed in packages of one 10 cubic centimeter vial, each cubic centimeter containing 3,000 million killed pertussis bacilli, suspended in physiological solution of sodium chloride and preserved with 0.5 per cent. phenol.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1923, p. 314).

United States Standard Products Company, Woodworth, Wis.

Typhoid Vaccine.—Marketed in packages of three 1 cubic centimeter vials, containing 500 million, 1,000 million and 1,000 million killed typhoid bacteria, respectively, suspended in physiological solution of sodium chloride and preserved with 0.5 per cent. phenol.

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SATURDAY, MARCH 22, 1924

MEDICINE AND THE COMMUNITY OF SCIENTIFIC THOUGHT

Medicine no longer stands alone as a discipline independent of the numerous other activities that engage the attention of the world's intelligence. More and more, the sciences that were formerly conceived as succinct fields of human interest and carefully walled off, as it were, from one another, have been found to merge so that the boundaries of their scope are no longer easily recognized. A few years ago it was customary to speak of certain borderline sciences, such as physical chemistry and physiologic psychology. Today it almost seems as if even the most fundamental sciences are so thoroughly interwoven in respect to point of view, technic and even content that there is a sort of continuity to the fabric. The major sciences in general are gradually exhibiting the characteristics of the borderline areas of a decade or two ago. The story of the atom runs alike through the pages of chemistry and of physics. The attempts to disrupt it are seen in the recent development of both these sciences. Mathematics likewise has demonstrated her indispensability to them. One scarcely knows in what category of intellectual worthies to classify a Bohr or a Millikan. The period of extreme specialization is giving way to a period of unifying generalizations. No science can at present stand utterly alone and survive.

The practice of medicine rests on the contributions of a group of underlying sciences. They are sometimes termed "preclinical" sciences—an unfortunate designation in that it may tend to belittle their scope and their independent fundamental character. Physics and chemistry, biology and psychology can survive and manage to pursue a worthy purpose without any thought of clinics or patients; but medicine, alike in its scientific and in its practical aspects, cannot succeed without these foundations. Medicine is, in no uncomplimentary sense, a parasite on their contributions. Only the quack and the faker divorce their practices from the fundamental sciences; and even these outcasts attempt to incorporate the semblance of scientific precision and nomenclature in the hocus pocus of their ministrations. The situation was well summarized by Peabody[1] in his vice presidential address before the Section on Medical Sciences of the American Association for Advancement of Science at Cincinnati, when he stated that never in its history has there been such vital need for medicine to strengthen its bonds with the so-called fundamental sciences, for at no time has the trend of medical research demonstrated more clearly its final dependence on these sciences. It is only a few years, he added, since the medical investigator seemed well prepared to attack the problems of metabolism if he was fortified by a background of general biologic chemistry; but his successor of today often finds it necessary to turn to physical chemistry, to electrochemistry, to photochemistry and to the various branches of physics. In the use of these sciences, Peabody concludes, the medical investigator may be forced to go entirely outside the ranks of his own profession, and seek the cooperation of experts whose experience has never brought them into contact with the field of medicine.

The growth of societies and associations of medically trained persons has kept pace with the rapid developments in the fields of the physician's activities. Programs of the most varied character are almost continually being evolved. Stimulating symposiums have become the order of the day in all manner of medical fraternities. The needs of the profession in these respects seem to be adequately, and often admirably, filled. It is in the direction of contacts with the fundamental sciences, with the devotees of physics, chemistry, engineering, zoology, botany, anthropology and psychology, social and economic sciences and agriculture that greater opportunities may still be created. If physicians can be attracted in larger numbers to the meetings of organizations devoted to the fundamental sciences as they are to medical congresses, there will be no duplication of the efforts of existing societies, but rather an awakening of interest in the newest contributions from every field of scientific learning. The appreciation of the community of scientific thought might become more real and widespread.

THE FUNCTIONS OF THE SWEAT GLANDS

In former days it was quite customary to refer to the skin as an excretory organ in much the same sense that the expression is applied to the kidneys. The possibility of "cutaneous respiration" was also discussed, even though it seemed unlikely to be of sufficient magnitude to play a part in the gaseous exchange of the body. It had long been known that when the skin is covered with an impenetrable varnish a peculiar train of symptoms sets up leading to death; but these manifestations are now recognized to be due to the failure of temperature regulation through skin functions other

1. Peabody, F. W.: The Opportunity of the Section on Medical Sciences, Science **59**: 136 (Feb. 8) 1924.

than the diffusion of gases. In 1891, Halliburton wrote in his widely read Textbook of Chemical Physiology and Pathology: "The relation of the secretion of the skin to that of the kidneys is a very close one. Thus copious secretion of urine, or watery evacuations from the alimentary canal, coincide with dryness of the skin; abundant perspiration and scanty urine generally go together. In the condition known as uraemia, when the kidneys secrete little or no urine, the percentage of urea rises in the sweat. The clear indication for the physician in such cases is to stimulate the skin to action by hot-air baths and pilocarpine, and the alimentary canal by means of purgatives."

Sudorifics are no longer in high favor as therapeutic agents. They rarely, if ever, accomplish the desired end of effecting an adequate elimination of substances that the kidneys may for the time be unable to excrete from the body. From a qualitative point of view, the skin can eliminate essentially the same substances that normally occur in the urine; but from a quantitative point of view the selective power of the kidneys is surpassingly conspicuous. The kidneys can remove certain catabolites from the blood in concentrated form to a degree utterly impossible on the part of the sweat glands; so that, as Plaggemeyer and Marshall [1] of Baltimore have long since pointed out, there is no longer justification for assuming that sweat glands and renal tissues can act vicariously to any notable extent.

The kidneys are singularly responsive to changes in the chemical composition of the blood. Therein they present the characteristics of effective and desirable excretory organs. As Adolph [2] has lately pointed out on the basis of his observations at the U. S. Bureau of Mines Experiment Station in Pittsburgh, while the composition of the sweat is correlated slightly with that of the blood, the product elaborated by the sweat glands seems to be primarily independent of chemical conditions in the body. The sweat glands, Adolph insists, are therefore comparable to the salivary glands and mammary glands in their work of producing a uniform secretion. This is more dilute than the blood in respect to most dissolved substances.

If, therefore, the sweat glands tend to elaborate a fairly uniform product—one in which the concentration of substances is low and essentially the same under all conditions so long as evaporation is prevented prior to its collection—the function of the fluid can scarcely be comparable with that of urine. The kidneys, Adolph remarks, are concerned with the conservation of the body's water; the sweat glands are concerned with the manufacture of a dilute fluid that shall easily evaporate. The sweat glands are conservers, therefore, of the body's supply of salts and other dissolved substances. Compensation occurs on the part of the kidneys only, since they are adapted to correct variations in the composition of the blood. First and last, then, the work of the sweat glands may be looked on as a part of the important function of temperature regulation. The skin helps to "excrete heat" rather than to eliminate other metabolic waste products. If this conception of cutaneous functions is tenable, some of the older therapeutic practices will find little support in the current knowledge of the physiology of the skin.

1. Plaggemeyer, H. W., and Marshall, E. K., Jr.: A Comparison of the Excretory Power of the Skin with That of the Kidney Through a Study of Human Sweat, Arch. Int. Med. **13**: 159 (Jan.) 1914.
2. Adolph, E. F.: The Nature of the Activities of the Human Sweat Glands, Am. J. Physiol. **60**: 445 (Nov.) 1923.

LIMITATIONS OF CHEMOTHERAPY

Science would be unfortunate indeed if it did not develop the spirit of uncompromising criticism as well as foster the genius for discovery in its devotees. Whereas the discoverer is likely to win the plaudits of the multitude and be hailed as the real promoter of human welfare and intellectual progress, the conscientious critic often fares badly. He is looked on with the prejudice and ill will that are ordinarily directed at a destroyer. Only the exceptional person fully realizes the importance of sober and well directed criticism as a corrective force which in the long run leads to proper constructive effort, though it may for the moment destroy what is faulty and unsound. Any one who reads the pages of scientific history can discern how legitimate criticism, sometimes unwelcome at the moment of its delivery, often has prevented the pendulum of enthusiasm for some attractive though unproved theory from swinging too far in one direction, and has brought it back to a more stable equilibrium. This statement applies, for example, to the rapidly developed popularity of chemotherapy, itself a name to conjure with. Ehrlich, who introduced the now widely quoted designation, intended it to apply to the use of chemical substances acting specifically on pathogenic infections. Chemotherapy was intended to shift the focus of attention from the infected host to the invading parasites.

Dale [1] has defined the aim of chemotherapeutic research as the attempt to find toxic substances which, having a strong affinity for the protoplasm of the parasite and a weak affinity for that of the cells of the host, could be administered in sufficient doses to kill the infecting organism and leave the host unscathed. The search must be for substances that are maximally parasitotropic and minimally organotropic. Despite the vaunted successes of so-called modern chemotherapy, Dale has lately reminded us, with objective frankness, that even in the early days of this type of investigation, when attention was focused on the effects of certain chemicals on infection with trypanosomes, facts were constantly presenting themselves which could only with difficulty, and with aid of subsidiary hypotheses, be reconciled with the idea that the curative substance acted by virtue of its differential affinity for the para-

1. Dale, H. H.: Chemotherapy, Physiol. Rev. **3**: 359 (July) 1923.

sitic protoplasm. The contrasts, he adds, between effects in vitro and those in vivo, and the phenomena of acquired resistance, specific for the infected host as well as for the infecting strain of parasites, and showing at the same time discrimination between nearly related remedies and community as regards others having no chemical similarity, were, and still are, difficult to bring within the scope of any simple type of explanation. The difficulty has greatly increased during recent years, as the methods of chemotherapy have spread to the treatment of other types of infection. Strangely enough, there is a partial return to the more empiric methods of therapeutic attack when chemotherapy, as defined, is failing. It is difficult, Dale remarks, to resist the conclusion that a new theoretical foundation is required for further orderly building, and that this will have to take fuller account of the great complexity of the therapeutic process, and especially of the cooperation of the infected host. And, he concludes, if this should mean some measure of reunion between "chemotherapy" and the parent pharmacology, from whose rather unenterprising tradition it claimed to be free, the result can only be to the advantage of therapeutic science.

THE TREATMENT OF EXOPHTHALMIC GOITER

The problems of the management of toxic goiter, thyrotoxicosis or exophthalmic goiter are singularly difficult of satisfactory solution. The dominant derangement is in the domain of the involuntary nervous system. Among the cardinal clinical symptoms are included tachycardia, exophthalmos, goiter and tremor, along with such less characteristic manifestations as diarrhea, sweating and palpitation. To these must be added the now readily measurable elevation of the basal metabolism. Confusion frequently creeps into the consideration of toxic goiter because some of the phenomena mentioned occur also in so-called autonomic imbalance, a disturbance of the involuntary nervous system by no means regularly attended with augmented basal metabolism. Aside from a variety of attempts at drug therapy, including iodin in one compound or another, and treatment by rest, the most commonly instituted remedial procedures in recent years have involved surgical ligation of thyroid blood vessels, partial thyroidectomy, and exposure of the thyroid gland to the roentgen ray.

Last year, Means and Holmes [1] of the Massachusetts General Hospital published an elaborate review of what some of these operative procedures had accomplished. They believe that the roentgen ray probably has a beneficial effect in toxic goiters, and for this reason has its place in our armamentarium for treating these diseases. Means and Holmes have found that about two thirds of the patients with exophthalmic goiter so treated show either recovery or improvement coincident with the treatment. The remaining third neither improve nor grow worse. In exophthalmic goiter, they state, when treated by the roentgen ray, if good results are not secured in a few months, surgery should be employed. Prolonged roentgen-ray treatment in patients showing no response is undesirable. The Boston clinicians concluded that some patients with exophthalmic goiter who are not cured by the roentgen ray are, perhaps, made better operative risks by it. A combination of the two forms of treatment may sometimes accomplish more than either does alone.

During this period, other groups of clinical investigators [2] at the Mount Sinai Hospital, New York, instituted a study of fifty unselected cases of fully developed exophthalmic goiter in order "to crystallize a definite therapeutic policy for the disease." No patient was included in this group in whom the clinical diagnosis was not confirmed by a distinct and continuous elevation of the basal metabolism. The course of the illness was followed with as little interference with the natural tendency of the disease as was compatible with the comfort of the patient. No specific therapy was instituted. The course of the symptoms and of the basal metabolism was closely followed, and the results obtained were estimated on the basis of restoration to social and economic usefulness, and on the return of the metabolism to within normal limits. Foci of infection, particularly in the nose and throat, received attention. There was no other than incidental routine medication. No purposeful psychotherapy was employed, but the patients were shielded, as far as possible, from psychic trauma, and attempts were made to adjust their social and economic difficulties. The further results of the observations on these patients treated by "skilful neglect" over a period of two years or more have just been published.[3] We are told that the course of their subjective symptoms did not compare unfavorably with those usually following thyroidectomy. The spontaneous course of the exophthalmic goiter was toward economic restitution in the vast majority (83 per cent.) of the cases. Hyman and Kessel believe that the results compare favorably with those reported from clinics in which specific therapeutic measures were instituted. They occurred with as great, if not greater rapidity, and the percentage of true recurrences is about equal. In respect to directly measurable manifestations, there was a tendency to gain weight, which in these unselected patients compared favorably with the gain in weight in patients who received specific therapy (roentgen ray). The basal

1. Means, J. H., and Holmes, G. W.: Further Observations on the Roentgen-Ray Treatment of Toxic Goiter, Arch. Int. Med. 31: 303 (March) 1923.

2. Kessel, Leo; Lieb, C. C.; Hyman, H. T., and Lande, Herman: Studies of Exophthalmic Goiter and the Involuntary Nervous System, III, A Study of Fifty Consecutive Cases of Exophthalmic Goiter, Arch. Int. Med. 31: 433 (March) 1923.

3. Hyman, H. T., and Kessel, Leo: Studies of Exophthalmic Goiter and the Involuntary Nervous System, X, The Course of the Subjective and Objective Manifestations in Fifty Unselected Patients Observed Over a Period of Two Years, in Whom no Specific Therapeutic Measures Were Instituted ("Spontaneous Course"), Arch. Surg. 8: 149 (Jan.) 1924.

metabolism in the first year tended to decrease progressively.

The New York investigators are influenced by the outcome of these patiently conducted, long continued observations to insist that, to deserve the credit of real efficacy, specific therapeutic measures must hereafter result in a clear-cut amelioration over and above the expectancy in the spontaneous course. We suspect that the proponents of more vigorous treatment will not be slow in meeting this challenge. What the preferred procedure shall be, only a rash person would venture to predict. Segall and Means [4] have already demonstrated by precise measurements of daily basal metabolism and pulse rates how relatively rapid the clinical improvement following successful subtotal thyroidectomy in toxic goiter may be. The clinician ought soon to be in a position to determine from carefully digested evidence collected by competent observers whether, or when, he prefers to employ "skilful neglect" or vigorous operative intervention in cases of exophthalmic goiter confronting him for treatment.

Current Comment

CHLORIN AND RESPIRATORY DISEASES

Although it may not be the most formidable of the diseases that attack man, the common cold is at least one of the most annoying, and it always brings with it potentialities of a more menacing character. A popular writer [5] has remarked that colds do not "run into" consumption or pneumonia, but they bear much the same relation to them that good intentions are said to do to the infernal regions. They release the lid of a perfect Pandora's box of distempers. A cold, therefore, is no longer a joke. There is today little doubt that many types of colds, if not all of them, have an infectious etiology. This does not mean that microbial agencies, whether filtrable or nonfiltrable viruses, are present in the affected mucous membranes only when the inflammatory reactions give signs of them. The etiologic factors may be dormant until an opportunity arises in the form of altered biologic conditions in the tissues that they infest. In any event, local infection is the keynote of the "cold." Quite naturally, therefore, the hope of being able to disinfect the invaded membranes has long aroused the enthusiasm of the therapeutist who deals with these disturbed structures. Usually he has attempted to steer between the danger of damaging the mucous membranes as well as destroying the microbes by the use of vigorous antiseptics, and the futility of procedures too mild to accomplish any germicidal result. Among the products that once awakened enthusiasm, formaldehyd represents an instance of the unduly damaging sort, whereas most of the vaunted mouth lotions belong in the other category. Furthermore, their possible period of action is confined to a very brief period. Local nasolaryngologic treatment is usually in essence merely a sort of local cleansing. It may diminish, though it by no means eradicates, the trouble makers. There is a note of interest, however, in the possibilities of the use of chlorin gas as outlined by Vedder and Sawyer [6] in a recent issue of THE JOURNAL. The observations at the Edgewood Arsenal seem to represent the most carefully controlled tests thus far recorded. According to the army physicians, inhalations of chlorin of a concentration of 0.015 mg. per liter, for one or more hours, have a distinctly curative value in common colds, influenza, whooping cough and other respiratory diseases in which the infecting organisms are located on the surface of the mucous membranes of the respiratory passages. There is a background of bacteriologic sense to the scheme. A thousand cases are not, however, many in which to test the effect of treatment on self-limiting diseases. Further developments will be awaited with interest.

IRON AND PERNICIOUS ANEMIA

The story of the etiology of pernicious anemia might properly be described as a series of chapters among which one may be labeled ignorance, another mistaken ideas, and a third the recital of unproved theories. Foremost among these occurs the implication of hypothetic specific hemolytic poisons of endogenous origin. Before the seeming barriers to the understanding of this baffling disease, it requires scientific courage to start a new attack. There are, however, recognized vantage grounds that serve for a temporary stand from which some forward progress may ultimately be made. Foremost are the evidences of hematolysis found in pernicious anemia, and particularly the increased amounts of iron in the liver, spleen and kidneys. Stieglitz [7] has attempted to correlate these with the less well recognized incidence of renal damage in this disease. Histologic examination of the kidneys frequently discloses degeneration of the tubular epithelium, and there is a deposition of iron in the convoluted tubules of the kidney. Since Stieglitz [8] has shown that the deposition of iron in the kidneys may cause mild nephritic changes in experimental animals, he ventures to assign a similar harmful rôle to the renal hemosiderosis in the pernicious anemia of man. The usual explanation ventured for the renal impairment in such cases has assumed that it is a result of malnutrition and anoxemia of the kidneys because of the anemia. If this were the case, one should expect clinical evidence of renal injury in secondary anemia; but it is rarely found. Why "free" iron should impair the excretory capacity of the renal tubules is not yet clearly established. The newly correlated findings merely lead to the conclusion that the renal functional changes in pernicious anemia may be attributed, at least in part, to the accumulation of iron in the convoluted tubules, rather than to the anemia alone. The hemosiderosis and the resulting changes in function are so

4. Segall, H. N., and Means, J. H.: The Immediate Effect of Subtotal Thyroidectomy in Toxic Goiter, Arch. Surg. **8**: 176 (Jan.) 1924.
5. Hutchinson, Woods: Preventable Diseases, Boston, Houghton Mifflin Company, 1914.
6. Vedder, E. B., and Sawyer, H. P.: Chlorin as a Therapeutic Agent in Certain Respiratory Diseases, J. A. M. A. **82**: 764 (March 8) 1924.
7. Stieglitz, E. J.: Disturbances of Renal Function in Pernicious Anemia, Arch. Int. Med. **33**: 58 (Jan.) 1924.
8. Stieglitz: Am. J. Anat. **29**: 33, 1921.

specific that, according to Steiglitz, one may speak of this condition as the nephritis of pernicious anemia. It is particularly interesting, he adds, in view of the fact that the changes are apparently purely tubular and result from a perverted metabolism. The therapeutic use of compounds of iron in pernicious anemia is common. Various students of the subject have insisted of late that such products are of little value in this disease. The presentation of Stieglitz leads one to ask whether iron medication may not even have a detrimental feature in a condition in which there is already a superabundance of the element in certain tissues, and its retention in the kidney is known to produce renal disturbance.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE, PUBLIC HEALTH AND HOSPITALS

Held in Chicago, March 3, 4 and 5, 1924

(Continued from page 895)

MEDICAL EDUCATION AND LICENSURE

MARCH 4—MORNING

Present Opportunities for Medical Study in the United States

DR. H. W. BRIGGS, Wilmington, Del.: The weeding out of low grade and commercial schools, and the raising of standards of both premedical and medical education has been a highly creditable work for which the profession, as a whole, should be thankful. It is a satisfaction to note that the few schools requiring a higher standard than the minimum are the most popular with prospective students, and it is safe to say that no properly qualified medical student has failed to obtain admission into some one of the standard schools of our country. That the margin between the supply and demand for opportunities for medical study in the United States is very small has been clearly shown. Unless facilities for medical teaching are increased there will, in the near future, be a lack of opportunity for some properly qualified students. Some of the schools are already planning an expansion and others should be encouraged to do so, and public sentiment, influenced by publicity and education, should be exercised to increase opportunities for medical education by state support and private endowments. Under no circumstances should the standards be lowered, but an equal chance given to every qualified student by increasing the capacity of the medical schools up to the greatest possible demand.

Inferior Medical Teaching Institutions

DR. CHARLES E. PRIOR, Boston: Many young men, in counting up the cost of a medical education, feel that the tuition fees in a first-class medical school are prohibitive, and turn to the lower grade schools without considering the worth of the commodity they are intending to buy. An education in a really good school usually costs the institution more than the student pays for it, and training in an inferior school is the most expensive in the long run. We have found many instances in which men have remained several years in a low-grade school, and, despairing of receiving a diploma, have gone to another school of even lower grade, and been graduated. One fact has been strongly impressed on me; that is, the number of young men from inferior medical schools who regret the time spent in such institutions, but feel that, having put in one or two years there, they are compelled to go on, because they cannot get credit for this time anywhere else. There is plenty of information for the benefit of young medical students, and it is surprising how few of them seem to get it, or are impressed by it. Among our rejected applicants are many young men of foreign birth, and, in going over the circumstances attending their course of study, they have admitted that they had not fully considered what it meant to take up a course of medical study. Instances are not rare of men coming to us for advice, as to how they can atone for their loss of time and get an education that is worth something; and this is not for the purpose of securing registration before our board, but because they have arrived at a point at which they can see what a good education means. I have no feeling against any institution that is honestly engaged in making physicians; but, in behalf of the many young men we have to turn down every year, I feel that I cannot urge too strongly the adoption of better teaching methods in schools of a certain type that our board is compelled, by law, to recognize.

DISCUSSION ON PAPERS OF DRS. BRIGGS AND PRIOR

DR. J. S. DYE, Waterbury, Conn.: In Connecticut are six cults practicing medicine by law. Each cult has its own board. The protection of the public is through that board which is specific; there is no general protection. The medical society has been keenly alive to the condition that existed in Connecticut and has tried to clean it up several times by introducing ideal bills that could not pass the legislature. The governor met the committee on public legislation of the Connecticut State Medical Society and asked it to explain to him the medical condition in Connecticut and also the cure. He appointed a commission of laymen—a commissioner of compensation, an educator, a politician, a lawyer and a business man. The medical society grew restless under this plan. The political boss of the legislature agreed to introduce a bill for them, and they backed the bill. The joker in this bill called for a commission and an advisory board representing all medical sects, whose function was not defined. Examinations in anatomy, physiology, physiologic chemistry, hygiene, pathology, public health, etc., were to be presented to this commission, one month before the examinations were given, for it to pass on. The board that examined the man had no right to pass on his educational requirements or his previous education or his moral requirements. This bill passed the legislature, but the governor vetoed it. The attorney general ruled that any man who had stood examination by one of these boards whose college was not validated had taken that examination illegally, and was practicing illegally. The master mind of the diploma mill came to Connecticut, taxed these practitioners, and had a bill lobbied through by an outside lobbyist. As soon as the governor vetoed this bill they immediately checkmated him again by putting on the eclectic list the colleges that had not been on their list and by holding another examination, validating the licenses of these men. Then came Harry Brundage of the St. Louis *Star*, the reporter who unearthed all this and presented the facts to the governor. To date they have revoked 167 licenses; they have spent $20,000; they will probably spend $30,000 more, and they feel that they have not scratched the surface. They have also gotten out a criminal indictment against two men for manslaughter. Connecticut is cleaning house, and our investigations show that there are a great many states that ought to do exactly the same thing.

DR. HAROLD RYPINS, Albany, N. Y.: Because of the affair in Connecticut, we undertook to find out how many leaks there had been in our medical practice act, and we found that those men who came up and applied for medical licensing and passed were all right without exception, but we had not taken account of the men who simply hung up a shingle and practiced. On that account we now have before the legislature a modification to our medical practice act. There are three main features to it. The first is that every physician shall register annually and pay a fee of $2 for that registration. Our department will then publish a list of registered physicians each year. If a man is not on that list, it is ipso facto evidence that he is an illegal practitioner, and he will have to show cause why he should not be prosecuted. The proceeds from the $2 fee will go to the prosecution of illegal practitioners. In that way we have a fund of approximately $30,000 or $35,000 for the prosecution of illegal practitioners. The second point in the proposed law is that the prosecution of illegal practitioners shall be taken out of the hands of the

district attorney and put into the hands of the attorney general of the state. The $30,000 will provide adequate fees for the attorney general to appoint a deputy attorney general, who will devote his entire time to the administration of the medical practice act. The third point is that it shall be illegal for any one but a licensed physician, veterinary or dentist to use the word doctor before or after his name. The governor has agreed to sign such a bill.

DR. H. M. PLATTER, Columbus, Ohio: Three years ago, Ohio amended its medical practice act and put some teeth in it. Most of the troubles that Connecticut has had and New York has had are due to the fact that the enforcement section is impossible of application. The Ohio medical practice act makes possible the hearing of these cases by a justice or mayor's court without a jury. Last year we convicted in Ohio 336 illegal practitioners in medicine. I too agree that there ought to be a little bit more attention paid to the title "doctor." I sometimes wonder whether we doctors ought not to be called "doctor of medicine" and make it part of our announcement so that the public may understand when they come to us that they are going to get the services of a doctor of medicine. Medical practice acts were enacted for the protection of the public, not for the protection of doctors. They are all legally founded on the idea that they are public health measures, and I am one of those who believe that it is one of the first duties of the commissioner of health to see that nobody practices who does not have a license from the state to engage in practice. There is something wrong with educational laws that permit any group of men to get a charter to conduct a medical institution. If that could be amended so that certain physical assets and a certain fixed curriculum, the number of teachers, etc., should be incorporated in one of these institutions before it could receive a charter, we would get away from some of these unfortunate disclosures of the activities of schools that have been selling diplomas.

DR. T. J. CROWE, Dallas, Texas: The greatest curse of the medical profession is the multiple state boards. Every medical practice act should be constructed along the line of a composite board. The crookedness has always come from states in which they have multiple boards. The real thing necessary is a single standard for the practice of medicine regardless of the system. Another thing that has been sadly overlooked in these meetings is the education of the public. What is the remedy? Get to the people. The American Medical Association should put on a campaign through the moving picture shows, not with a doctor behind it but with disinterested people like the Pathé Weekly or the *Literary Digest*, and put on the screen every night in 10,000 cities in the United States illustrations of the diphtheria bacillus and say that this is the germ that causes diphtheria and kills thousands and thousands of children each year. Sprayed into the face by a playmate at school in the act of coughing or sneezing, or attaching itself to the spoon or the cup or the saucer or the drinking vessel, it becomes an inmate of his mouth or throat or nose and he may die from diphtheria. Go through along that line with typhoid fever, with meningitis, with smallpox, until the public thoroughly understands it, and you will educate the public in a night more effectually than you will ever do in 10,000 years in any other way.

DR. M. L. GRAVES, Galveston, Texas: Our law provides that a man practicing in violation of the law shall be subject to a fine of not less than $50, and not more than $500, and by confinement in the county jail for a period not exceeding six months, and each succeeding day's violation of the law constitutes a new offense. When public sentiment is sufficiently enlightened in regard to it, we feel that the medical practice act will be better enforced and the protection of the citizen will be enhanced thereby.

Qualifications of an Examiner for Medical Licensure

DR. W. S. LEATHERS, University, Miss.: The Federation of Licensing Boards should take active steps in instituting a more concerted effort for the establishment of proper educational qualifications for those applying for license to practice the healing art. There should be one board in each state authorized to maintain proper educational standards for the practice of medicine, and before which all those applying for license to practice, regardless of the school, should pass a satisfactory examination. All states should recognize the National Board of Medical Examiners in the granting of reciprocal license for the practice of medicine. Owing to the variation of local conditions, it would seem impracticable to have a standard organization of, and uniform qualifications for the personnel of, state examining boards. The scholarship of an examiner for medical licensure should be of a high order, and the physician who accepts appointment on the examining board should be a man of high integrity of purpose and a public-spirited citizen. Examinations for medical licensure should be both written and practical; but in most states, because of the lack of adequate funds and improperly selected personnel, proper standards should be maintained by giving a theoretical examination. The examiner for medical licensure should be kind, sympathetic and impartial, and he should be imbued with a judicial frame of mind tempered with common sense. The examiner for medical licensure should be assigned the same subject each year, the one in which he is best fitted to conduct the examination. The questions should be evaluated on the basis of relative importance, and graded in such a way as to represent 75 per cent. of the total valuation. It is the duty of the examiner to observe the strictest precaution in the keeping of accurate records of those who apply to the board for license to practice, including the name of the applicant, the place of birth, preliminary education, medical degree, date of examination, license date, license number, application number, address and remarks. The objective of the examiner should be to determine whether the applicant is a safe person to practice medicine, and a person of good character. No examining board should examine a student who graduates from a C grade medical school.

MEDICAL LICENSURE

MARCH 4—AFTERNOON

Why Reciprocity?

DR. T. J. CROWE, Dallas, Texas: If it were our privilege to do so, we would cut reciprocity from its connection with the transfer of medical legalization because it implies the existence of a contract, or mutual agreement, which cannot be so written that it may be put in practice without injury to a number of thoroughly qualified physicians of the reciprocal states. In making contracts for registry without examination, it seems to me that state boards have constantly kept self in mind. In other words, regardless of the credits for educational and professional skill presented by an applicant, a majority of them have regularly refused reciprocal registry to the examinees of those state boards that would not or, because of statutory prohibitions, could not accept theirs in return. I object to reciprocity as it is now conducted because of the laxity with which applications for endorsement are handled by a majority of the state boards; the readiness of the average state board secretary, particularly if he is a physician in active practice, to endorse the applications of strangers whose personal and professional histories—except such scant information as is contained in his register—are unknown to him, and to certify the photograph of a man or a woman whom he has never seen. That such endorsements are unreliable, frequently misleading, I have ample evidence. This federation should make an effort to secure the adoption by its member boards of satisfactory reciprocal standards—as minimum premedical credits and graduation from any one of a list of acceptable medical colleges—on which all state boards may in their discretion grant license to practice medicine, regardless of the applicant's previous residence or the date or location of his original registry. Medical examining boards were created for the purpose of protecting the public against incompetence, not for the protection of physicians, and in the performance of this service it is their duty to recognize and reward medical competence, regardless of whence it came or when it was attained; to put aside sectional prejudices and personal attitudes, and make it possible to grant all men of like academic credits and professional merit the enjoyment of equal privileges in every state of the Union.

DISCUSSION

DR. OSCAR DOWLING, New Orleans: I believe that if a man is competent to practice in one state he should be competent to practice in another.

DR. J. M. BYRUM, Shawnee, Okla.: I want to protest against the idea of including osteopaths and chiropractors. Oklahoma tried that for fifteen or twenty years, and the idea was abandoned for the reason that no good came from it.

DR. ALEXANDER MACALISTER, Camden, N. J.: New Jersey has a bill in the legislature providing that nobody will be entitled to use the term doctor unless he has an academic degree or unless he is a regular physician; and the laws that govern the practice of osteopathy, dentistry and veterinary medicine will provide that, if he uses the term doctor, he has to affix to it veterinary surgeon or osteopathic physician, or designate just what he is.

DR. S. W. WELCH, Montgomery, Ala.: I want to accentuate the idea that the medical practice acts are for the protection of the people. The state is responsible for the medical practice act. There should be one board, which should pass on these qualifications, and medical practice acts, medical examinations and the issuance of certificates to practice medicine should all be on a single basis of education. A man should know the fundamental sciences that underlie the practice of medicine, and the history, symptoms and causes of all diseases before he should be allowed to practice on any disease by any method whatsoever.

DR. WILLIAM C. WOODWARD, Chicago: I like to hear a man tell the audience that the government has some interest in the welfare of the citizens. I am told too often that a man has the right to do what he feels like with his own body. That is not the case. We have an economic and a military interest in the body of every man. Nobody makes that assertion about the absence of a governmental interest in a man's body when it comes to providing him with the proper water supply and the proper food and the proper drugs and all that. The theory is that the government can go to any expense to enable a man to build up a sound body and keep him happy, but then we must not allow any interference to his right to submit that body to any creature on the earth who calls himself a doctor and have it abused.

AMERICAN CONFERENCE ON HOSPITAL SERVICE

MARCH 5—MORNING

Factors That Indicate Professional Efficiency of the Hospital

DR. E. A. CODMAN, Boston: I do not know of an efficient hospital. All hospitals are inefficient compared to what they might be. To my mind an efficient hospital would be continually following up its patients to ascertain its mistakes and, by analyzing the causes, continually trying to prevent similar errors. It is this which I call the end-result system. To my mind, professional efficiency of the hospital demands (*a*) that the patients with curable conditions should be promptly treated and cured in a business-like way, and (*b*) that doubtful or incurable cases should be carefully studied and recorded by the best qualified personnel obtainable, in order to hasten the day whene similar cases may be treated in a business-like way. Among our most inefficient hospitals are some of our teaching institutions, and among our less inefficient hospitals are many of the new small institutions growing up in our larger towns and smaller cities. Too many of the former teach medicine by precept rather than by example, and too many of the latter are inclined to attempt more than they are equipped to do efficiently. Both kinds attempt to care for more cases than they can care for well, rather than let a less conspicuous rival care for the simple ones. I wish we could have a teaching hospital to which none but curable cases would be admitted. A medical school connected with such a hospital would graduate a new kind of practitioner, who would not be taught by eminent example that he had a right to treat any person that would trust him, whether he knew what the matter was or not. I wish your millionaires, your insurance companies, your bankers, your city fathers and in fact your whole communities could see the light that I do, in a hospital run for limited profit for its stockholders, on a business basis, with no pretense of charity and accepting only curable cases, admitting its legal liability like any other public service corporation. We could then begin to talk hospital efficiency instead of inefficiency. Our universities would begin to pay our teachers instead of licensing them as Robin Hoods; our endowed and municipal institutions would be free to do their work decently, and humbug high-brow and low-brow would lead a skulking existence.

Measures That Indicate Efficiency in Hospital Administration

DR. M. T. MACEACHERN, Chicago: The measures of administrative efficiency can be determined only from the quality of service rendered and the end-results obtained in the fulfilment of the broadest functions of the hospital, keeping always in mind that the patient in terms of restored physical health must be the all-in-all primary objective. To ascertain this, the entire organization must constantly keep three important questions before them: 1. Is the hospital rendering every service it can and should to the patient and the community which it serves? 2. Is the hospital well organized with all the units properly coordinated, adjusted to make a smooth working whole, characterized throughout by a true spirit of cooperation, giving a maximum and satisfactory service at a minimum cost? 3. Is the hospital rendering the right kind of service in the medical, nursing and business or physical phases of the hospital? Positive answers to these can be ascertained only when we take stock of ourselves and see exactly what we are accomplishing, or, again, the determination of end-results.

The Relationship of Necropsy Percentage to Hospital Efficiency

DR. LUDVIG HEKTOEN, Chicago: Appears in this issue, page 949.

DISCUSSION ON HOSPITAL EFFICIENCY

DR. RAY LYMAN WILBUR, Stanford University, Calif.: The prime matter of importance in the care of the sick is what the physician actually does when he makes a decision in regard to the patient. All the hospital can do is to provide certain supplementary aids in making it possible for him to make these decisions and in making it possible for him to carry them out. With our increasing multiplicity of machinery and new methods, our modern hospital has become a very expensive and a very important place for the care of the sick. It has to be prepared to carry a peak load of cases requiring unusual attention. It carries at the same time under ordinary circumstances a considerable number of patients at a great expense to the hospital that could be much better cared for somewhere else where so many expensive things were not provided and maintained. The difficulty that the hospital faces now is that it is not universally applicable to the community. It doesn't serve every body. Some device must be found by those interested in hospital organization, management, construction, endowment, to get a more universal application of the hospital. One of the simplest ways to bring it about is to make a better selection of patients and to develop the convalescent home idea, to develop the idea of getting the patient out of the hospital sdoner, with a visiting nurse arrangement, if necessary, to make the hospital a place for a short stay instead of a long stay, particularly when it costs so much to maintain a square foot of space inside one of our built-up communities, where most of these hospitals are. The hospital has made great progress, and there has been a good deal said today about end-results. The final end-result that comes with the necropsy is just as important to the hospital as some of the other end-results that have been indicated. Necropsies require courage—courage on the part of the patient, the patient's family, the hospital and the physician. The physician often does just as Dr. Hektoen has said; he is willing to let sleeping dogs lie. He doesn't want to get too much information, sometimes, because he has a certain feeling that perhaps the picture is not complete; and we like to be right in this world. The hospital often doesn't care very much about it, and sometimes the patient's family is a little afraid that there might be something disclosed that is unpleasant. Courage is the thing that has built up scientific medicine, that has made the thing advance

DR. MERRITTE W. IRELAND, Washington, D. C.: There has been markedly increased efficiency in the diagnosis of all medical and surgical cases. This has been brought about by a more thorough examination and more complete physical survey of each case. During the last few years there has been an increasing tendency for the duties of our medical officers to become more specialized. This is without doubt a factor in efficiency, but it is questionable whether this tendency has not gone too far, in that it has limited the production of the generally all-round useful medical officer. Progress in treatment has been no less brilliant. Perhaps in no other department of our hospitals has as much progress been made as in the laboratory, both in the variety and in the volume of the work done. Improvement is manifest in the increased attention of the chiefs of service in their services and in the cases. Better case records are being kept. Conferences, weekly or oftener, of the various heads of the departments of the hospitals with the commanding officer and executive officer give coordination difficult to obtain by other means.

DR. W. C. RAPPLEYE, New Haven, Conn.: At present, in the hospitals of the United States, their costs alone are about $550,000,000 a year. The general ineffectiveness of the American hospital program represents an annual loss financially in the failure to utilize these funds in a total of about $50,000,000 a year. Again, by comparison, this amount of money represents slightly more than the total income from the twenty largest endowed foundations in the world today which are capitalized at approximately $800,000,000; so that we are actually losing in our hospital program a sum of money, or using it possibly not wisely or not efficiently, at any rate. Of course, I think most of us would agree that all of us have ideas as to how that might well be used. Parallel with the hospital, too, must be the public health organization of the community, the organized legal machinery, the community public health service; for, after all, the hospital and this public health service have a function that is related only in terms of how they serve that community through the men who are out on the firing line.

DR. HERMAN SMITH, Chicago: There is no question that the type of medical or surgical services given by medical staffs to patients is one of the best indexes of the professional efficiency in a hospital. Attention should be called to the fact that, while the individual patient is and must remain the hospital's chief concern, the larger field of community health service must not be forgotten. Hospitals are responsible for supplying to the community a continuous stream of well trained professional personnel for the domiciliary care of the sick. This means well trained interns and nurses. The facilities for interns' and nurses' instruction should not be overlooked in any consideration of a hospital's professional efficiency. A hospital may have most of the physical means for efficiently treating its patients; but, without cooperation of the medical staff and administration, inefficient results will be obtained. No hospital will ever be stronger than its medical staff. It then becomes the administration's duty to obtain as much equipment and sufficient assistance that is necessary for the staff to obtain its highest professional aims. The necropsy percentage is one of the signs of the administration's interest in advancing the medical staff's professional opportunities.

DR. E. R. LECOUNT, Chicago: I have very little to add to Dr. Hektoen's presentation. I emphatically commend his suggestion that necropsies should be made by physicians regardless of whether they have had experience or training in such work. There is one phase of postmortem examinations I keenly feel should be commented on—their execution for medicolegal purposes. I have heard medical jurisprudence mentioned in these meetings but only casually and then with regard to the generally inadequate character of the courses given in this subject. Dr. Flexner omitted any reference to this topic on Monday in comparing conditions here with those in Europe. It must be frankly admitted that there is no university-connected institute of forensic medicine in this country, and this demands your full notice. I am quite familiar with what Dr. Magrath has in Boston and with the work of Norris as chief medical examiner in New York, and I believe that were they here they would endorse this statement, although their conditions, so far as postmortem work for medicolegal inquiries are concerned, represents probably the best we have. In our other large cities you are individually acquainted with these lamentable conditions. I have no hesitancy in stating that the medical profession is responsible for this deplorable state of affairs and none whatsoever regarding my belief that its correction must come through many years of persistent, courageous work. I respectfully commend it to your serious consideration.

SPECIAL REPORTS

Present Demand for Interns and Possible Use by Hospitals of Nonmedical Clinical Assistants and Laboratory Technicians

MR. HOMER F. SANGER, Chicago: Appears in this issue, page 992.

Annual Report of the Hospital Library and Service Bureau of the American Conference on Hospital Service

MISS DONELDA R. HAMLIN, Chicago: In addition to the usual routine of collecting, assorting and tabulating material on hospital construction, equipment and administration, we have two very interesting studies under way. These are not surveys, they are informal studies. One deals with the administrative relationship between medical schools and their teaching hospitals. The other study is that of the educational facilities for training colored nurses. The bureau is under the direction and a part of the American Conference on Hospital Service. It collects and disseminates information on hospital construction, equipment and administration. It is an advisory group. It simply collects and makes available the information. This information covers not only the literature but also information in regard to current hospital practices. The bureau is maintained by voluntary contributions from the eighteen national associations, from interested individuals, from a large group of hospitals that have but recently contributed to its support, and by the Rockefeller Foundation. The only requirement for service of the bureau is that one be in hospital or public health work.

HEALTH AND PUBLIC INSTRUCTION

MARCH 5—AFTERNOON

Work of the Bureau of Health and Public Instruction of the American Medical Association

DR. JOHN M. DODSON, Chicago: The bureau is specifically interested in the medical education of the public. The magazine *Hygeia,* which has just completed its first year, is the principal agency through which the Bureau of Health and Public Instruction disseminates medical information to the public. As it is the property of the American Medical Association, every member of the Association is a stockholder in the project and is urged and expected to assist in promoting it by extending the circulation of the magazine, by contributing to its columns, when he is able to do so, and by comment and criticism. Wide publicity should be given to the prize contest open to high school pupils for the best posters on health topics. The monthly clip-sheet contains abstracts of articles in *Hygeia* and is widely circulated among the newspapers and other lay publications. Physicians are urged to bring articles appearing in the clip-sheet and in *Hygeia* to the attention of the editors of their local papers and secure the reprinting of such items. Another activity of the former council, which is being continued, is the printing of pamphlets on health topics. The older pamphlets are being replaced by new, up-to-date material which appears first in *Hygeia.* The series on protection of animal research is not to be continued, at least for the present, because of the organization of a new lay association—the Friends of Medical Progress—with headquarters in Boston. It is quite certain that a lay organization can be more effective than one which is strictly medical in resisting the attacks on the use of animals in research on vaccination and on other essential medical activities. It is urged that cordial support be given to the new organization.

Periodic Health Examinations and Education of Medical Students for This Service

DR. L. S. SCHMITT, San Francisco: Graduates in medicine have had their attention directed to the periodic examination of apparently healthy persons through the efforts of the Council on Health and Public Instruction of the American Medical Association. This policy has been approved, and methods and forms for physicians' office records have been published. For years, pediatricians and "well baby" clinics have stressed the value of periodic examinations of infants and children in the preschool and school age. Prenatal care of expectant mothers has been accepted by both the medical profession and the laity. In 1922, the California Medical Association adopted a resolution whereby the office of every member of the society became a "health center." By the terms of this resolution, members of the society have announced that without the intervention of any agency they "are ready to render service to any person requiring professional care, that those who are able to pay the physician's regular fees for this service should do so, those who are able to pay part should do so, and those who are unable to pay any of the fee should have the service just the same." That these suggestions are sound has been demonstrated by the fact that one third of persons applying to the health center of the University of California Hospital have been referred to private physicians. In order that the students of the University of California Medical School should appreciate the need of the correction of defects of function and structure and errors of habit, at an early period in their medical career, and to prepare them to carry out the recommendations enumerated above, the following methods have been employed: prenatal care, postnatal care and "well baby" clinics. Fourth year students are assigned to the pediatric section of the outpatient department. Third year students attend lectures by the department of obstetrics and gynecology, in which their attention is directed to the prevention of complications in labor. In reviewing the maternity cases assigned to students, emphasis is placed on prenatal and postnatal care. In connection with the outpatient department, an adult "health center" for the periodic examination of apparently healthy individuals has been recently established. While not a part of the medical section of the dispensary, it is intimately connected with it. Only persons who are unable to pay a private physician are accepted. To those able to pay it, a fee of $1 is charged for the purpose of covering, in part, the cost of the laboratory work in connection with the examination. It is expected that reexaminations will be made once a year to determine the results of corrective measures and to maintain general health. As the number of persons requesting periodic examinations increases, arrangements have been made so that third year students assigned to general medicine in the outpatient department will spend part of their time in the "health center." One of the most efficient ways of bringing about an appreciation of the value of periodic examination is by means of the annual physical examination required of all medical students. In a recent examination of members of the third and fourth year classes, physical defects were noted in 59 per cent. of those examined. These examinations are carried on by the infirmary service of the University Hospital. Student nurses are physically examined during their probation period and annually thereafter. All remedial defects are corrected, and the necessary follow up records are kept. All employees of the University Hospital are examined at the time of their employment. Food handlers are reexamined once each quarter.

Education of the Public as to the Value of Health Examinations

DR. B. L. BRYANT, Bangor, Maine: The Committee of Public Relations of the Maine Medical Association has made out a plan of campaign, which has been approved by the state board of health and the Maine Public Health Association, and which is now being put into operation. In our campaign we approach the physician first, because, unless he is in a receptive mood and ready to cooperate with those who come to him, the program can never succeed. Articles on health examination will be carried in the state journal. Preparatory work has been going on for some time through the meetings of the county societies, conducted by the various officers of the state medical associations, the president, secretary and councilors. Cooperative health clinics have already proved a great success. We are mailing to each physician a personal letter together with blanks and a reprint of instructions on the necessity and methods of making proper health examinations. All physicians will be advised to impress on their patients, in a personal way, the value of coming once a year for a thorough physical examination. As for the campaign among members of the laity, this campaign will be conducted solely by the state board of health and the Maine Public Health Association. The Maine Public Health Association, through its publications, its affiliated societies and the public press, is better able than any one else to carry out a publicity campaign. There would be no feeling that any physician is in any way advertising himself or getting any advantage from doing this work. A standard lecture will be prepared by the three groups, but issued in the name of the state health department and the Maine Public Health Association. This lecture is to be circulated and read before the lay organizations, such as the women's clubs, churches, organized labor and all others affiliated with this group. We are doing that successfully with the cancer division of the public health association at the present time.

DISCUSSION ON PERIODIC EXAMINATIONS OF THE APPARENTLY HEALTHY

DR. RAY LYMAN WILBUR, Stanford University, Calif: The big advances in medical education coming in the next decade are going to come from the outpatient clinic. The big advances that are going to come in medical practice in the relief of those conditions that concern our fellow citizens the most are going to come from these periodic health examinations. If we understand the game of treating established diseases of well known origin, we understand hygiene and care of the body, and can give a man a good start. This periodic health examination is an attempt to bring expert management into the daily life and conduct of the human machine. It is a much more difficult business than to practice medicine. It takes more brains, more understanding of the human body to make a satisfactory periodic examination, than to do anything else except the highest grade of accurate diagnosis. Great progress has been made in this movement in a short space of time. To have an examination on your birthday has been a slogan that I have heard in a number of different communities.

DR. FRANK BILLINGS, Chicago: Unless the medical profession is considered as the main factor in any program that is adopted, it will not be a success finally. After all is said and done, under whatever organization made, the real work of examination must come by the practitioner of medicine. You may have cooperation and all that is to be desired, but unless the medical profession cooperates and affords that practical help which it alone can furnish, it will not succeed. Therefore, the main point in considering the way in which the medical profession can be brought into this in a way that will be a success would be to go back to the family practitioner, who is responsible for families. We say that the family physician is not as efficient as he formerly was, because he has not had the opportunity to advance in knowledge with the present status of modern medicine. This may be true or it may not. My suggestion has been in conferences on this subject that organized medicine should take leadership in this. Let us ask county and district societies to promote periodic health examinations by members who are family physicians of all the members of the families. The family physician is the one who will impress the public with the need of periodic health examinations more quickly than all the other agencies in the world. If it is sponsored by the state, county and district societies, it relieves the family physician of any accusation that he is pushing this thing for his own benefit, because it is pushed by all organized medicine. The American Medical Association, through its officers, Board of Trustees and others, feel that the time has come when the welfare of the public must be considered to a greater degree by improving the quality of medical practice in this country; in other words, improving the status of the physician looking to better service to the public, and, therefore, inaugurating methods of postgraduate instruction that may be utilized by the physician and

made so practical that he cannot get away from them by taking it into the field to him. We are going to decide at the annual session of the American Medical Association in June just what can be done in this direction, and it amounts to something like this: to organize an ambulatory clinic with a personnel, with the right medical man who can give the time on a paid basis with an assistant, if necessary, to give clinics and to teach; with that an ambulatory laboratory that can now be put in a motor and carried any distance and set up, and with that technicians to go with that laboratory and to remain in a county two weeks, three weeks if necessary, in advance having the members of the county society organized and ready to bring their patients there and have them taught diagnosis. It can be done without great cost. It should initiate from the state and the district and the county society, but the American Medical Association stands ready to help in the equipment and personnel in carrying this forward. When that is done, an ambulatory clinic can cover a large state in one year.

DR. ETHAN FLAGG BUTLER, Sayre, Pa.: There devolves on every well organized hospital the moral obligation to participate in the program of medical education. That participation might involve pure research, university instruction of undergraduates in medicine, a form of postgraduate instruction under competent faculties, the informal participation in extension courses, support to local county societies in their programs, and counties in outlying districts need that support very badly, and the general spreading of propaganda today in relation to the maintenance of a high level of public health. I doubt whether there is any hospital in any community, however small, that cannot make its effect felt on the surrounding territory and on the quality of medical service that that community can expect to have.

DR. LOUIS M. WARFIELD, Ann Arbor, Mich.: I think it is perfectly evident to all teachers of medicine today that when any organization asks us to introduce another course into our curriculum we shy like a skittish horse. It is not because we do not believe in periodic health examinations; far from it, we are all tremendously interested in it, and some of us, I myself included, have for many years urged on patients with whom I have come in contact that they come and get periodic examinations, and I have explained to them why I thought it was so essential that they do this. I cannot see any essential difference between the teaching of students in the diagnosis of disease and the teaching of students for periodic physical examinations, but I do see a difference in the point of view, and I think that is the thing that should be emphasized. It seems to me that it would be quite possible in the curriculum as already established with the courses in public health, beginning at the second year, going through the third year and into the fourth year, so that by the time the student arrived at the fourth year a member of the clinical staff could take on himself the duty of seeing that the students went out of the university with some appreciation of what it means to examine people to show that they are in possession of good health, and to give the student the appreciation of what it means in the public health work. It is simply an extension, then, of the public health instruction.

DR. O. W. H. MITCHELL, Syracuse, N. Y.: I want to call your attention to some demonstrations that have a direct bearing on the question, which were being conducted in New York State. These health demonstrations are being financed from the Millbank Fund. There are three demonstrations, one in the rural county, one in a second class city, of which Syracuse was chosen, approximately 200,000 people, and then a district in New York City. We should be able to try out most of the things that have been advocated here in a very careful way, and if money has anything to do with it, we should be able to carry on activities that need the proper finance. The Syracuse health department is spending probably $200,000 a year. We are adding in the Syracuse health demonstration $130,000 a year to be spent in active work.

DR. S. W. WELCH, Montgomery, Ala.: To a practical health administrator, the question of getting over health examinations and conducting clinics of one kind or another has been absolutely baffling. The health machinery provided by any state is so utterly inadequate to the task as to make it impossible even to consider. The efforts at holding baby clinics under the maternity and infancy law is so absolutely inadequate as to make a practical man shrink from going before a practical people with the proposition. To send two or three persons around to conduct clinics in a population of two and a half million people scattered over an area of 50,000 square miles is an absurd proposition. There is only one way to handle this proposition and that is through the medical profession.

DR. WILLIAM ALFRED SAWYER, Rochester, N. Y.: In Rochester, N. Y., through the tuberculosis association, in conjunction with the health bureau of the city, and by the supervision of a committee representing various hospitals, we have started a health examination clinic. This has been held on two evenings a week, and a fee of $1 was charged for the first year. It has since been raised to $2. We started independently of any one else so far as we know, but we have since followed to some extent the health examination clinic of the Cornell Medical School in New York City. We have tried not to develop a large clinic, but to make it a demonstration to the medical profession. We want their cooperation. In all the publicity we have urged people to go to their own physicians for such an examination; but if they are not able to do so or do not care to do so, we will take care of them. Not only are we sending out publicity regarding this clinic, but we are interesting ourselves in the examination of the nurses in the hospitals, and of the public school teachers. We are finding that the school board has by no means neglected the opportunity, and we hope that this may be a nucleus of a bigger movement in the city.

Organization and Experiences of the School of Hygiene at the University of Pennsylvania

DR. A. C. ABBOTT, Philadelphia: As to entrance requirements, if it is the student's desire to secure the degree of Doctor of Public Hygiene, we require that he shall be a graduate of a Class A medical school, or shall have had a medical education or practical experience equivalent, in our judgment, to such preliminry education. If he matriculates as a candidate for the Ph.D. in hygiene or cognate subjects, he must have fulfilled all the requirements of the graduate school of the university before his candidacy is approved. Candidates who may desire a less elaborate systematic course of instruction, may, on the satisfactory completion of one year's work, be awarded the certificate designating the holder as "Certified Sanitarian." Candidates for this course of instruction may be either physicians, not graduates of Class A schools, or laymen qualified to profit by the work through having been awarded the baccalaureate degree in either science or civil engineering. For special students, that is, those taking work only on particular phases of the subject, our requirements are less rigid. Though we have been engaged in this work now for a reasonable length of time, we are not yet convinced that the group of studies required by us for the degree is the best. From time to time, we have modified it more or less, but we have kept constantly in mind that no group of subjects that does not fully acquaint the student with the ramifications of this many-sided problem can be satisfactory. For the Doctor of Public Hygiene degree, the university requires two years of study, one of which—the latter—must be in residence at the university. The candidate must also satisfy all the requirements of the several instructors who have participated in his training before the degree is awarded.

Double Nose.—F. F. Muecke and H. S. Souttar report the case of a girl, aged 3, who had two completely formed noses, side by side, the right one being more central and larger than the left. Each nose had its own septum, two nostrils, and well formed alae nasi. At the root of each nose, and on its mesial aspect, was a minute, round depression, the morphologic meaning of which it is difficult to determine. The child presented no other abnormality, the lips, jaws and palate being perfectly formed and perfectly symmetrical. The method of operation was to excise the mesial halves of both noses, including the nostrils and their mucous lining, and to bring the two septa together. The child now has a somewhat broad and flattened mesial nose with two nostrils which function perfectly.—*Proc Roy. Soc. Med.* **17**:8 (Jan.) 1924.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Malaria Control.—Boligee, Greene County, is organizing an antimalaria campaign on which more than $30,000 will be expended. It is said that malaria prevails to such an extent in this community that the negroes are moving away from the plantations. There was a great loss of crops last year due to malaria among farmers. A swamp, 7 miles long near the town, will be drained.

State Medical Meeting.—The program of the fifty-seventh annual session of the Medical Association of the State of Alabama, April 15-18, at Montgomery, has been received. Dr. William W. Harper, Selma, will preside. Dr. Douglas L. Cannon, Montgomery, is secretary, succeeding the late Dr. Henry G. Perry. Drs. Bronson Crothers, Daniel Fiske Jones and Roger I. Lee of Boston; Dr. Frank Dennette Adams, Washington, D. C., and Dr. Joseph Denegre Martin, New Orleans, will be among the out of town speakers.

CALIFORNIA

Medical Credentials Lost.—It has been reported that a trunk belonging to Dr. William S. Simpson, Ontario, was broken open several months ago and the following credentials taken: Hahnemann Medical College diploma dated 1876, special diploma from the New York Ophthalmic College dated 1884, Cook County (Illinois) Postgraduate certificate dated 1876, and a California license certificate dated 1902. State boards should be on the lookout for these credentials.

COLORADO

Personal.—Dr. John W. Fuqua, Greeley, has been appointed physician of Weld County.

Botulism Kills Nine.—According to reports nine are dead and nine others are in the hospital, as a result of botulism contracted by eating sausage. All of those affected were members of an Italian farm colony near Sterling.

CONNECTICUT

Sutcliffe Sentenced.—"Dr." George M. Sutcliffe, Unionville, whose license was recently revoked by the special grand jury (The Journal, Dec. 15, 1923, p. 2055), pleaded guilty to obtaining an eclectic license by fraud and was sentenced to six months in jail for manslaughter at Hartford, March 11. Sutcliffe was charged with the death of an ex-service man through an overdose of ether, according to reports.

Diploma Inquiry Continued.—The findings of the special grand jury which for five months has been investigating the fraudulent practice of medicine in Connecticut were presented to the superior court, March 14. The grand jury condemned the Middlesex College of Medicine and Surgery, Boston; the St. Louis College of Physicians and Surgeons; the Kansas City College of Medicine and Surgery, and the College of Physicians and Surgeons, Boston. Concerning the St. Louis College of Physicians and Surgeons the grand jury said in part:

> Our examination, as far as it affects this college and its graduates, leads us to the conclusion that persons who attended it did so for the purpose of obtaining a diploma that would admit them for examination by the Connecticut Board of Eclectic Examiners. Some of the authorities and faculty of this school were without honor or any conception of the duty which educators owe to the young, and were on such terms of intimacy with various members of the Connecticut Board of Eclectic Examiners as to lead us to the conclusion that students were induced to attend the institution and pay for and receive a diploma with the knowledge that the holders of such diplomas would receive consideration from that board which they would not otherwise receive. Members of the Connecticut eclectic society made strenuous efforts to have this college recognized by the state board of eclectic examiners, and went so far in their efforts as to conceive a plan of "packing the board." A failure to observe the law and a disregard of obvious duty on the part of the state board of eclectic examiners is responsible for the persons previously named having been permitted to take the examinations in Connecticut. The possession of licenses by these persons was brought about by fraud, deceit and disobedience of the law and wilful disregard of the statutory provisions of the state. The jury added that the Connecticut Eclectic society, composed in the main of graduates from these fraudulent institutions, voted to place them on the list of acceptable colleges, notwithstanding a warning from the National Eclectic Association, which characterized the four condemned colleges as frauds.

The investigation conducted by the grand jury disclosed that the Middlesex College of Medicine and Surgery was operating under an old charter granted in 1859, which was revived in 1914, and that while the charter gives the institution the right to teach eclectic medicine, it is not an eclectic school and has no classes in eclectic medicine listed on its typewritten curriculum.

The jury stated that:

> "There were no graduates from eclectic schools or colleges on the faculty and no lists of textbooks on eclectic medicine published in the catalogue of the institution. An inspection of the dissecting room of this institution indicated that it had not been in use for some time. The chemical and pharmacologic laboratories failed to show evidence of use by students. It was claimed that clinical instruction was given at the Lynn Hospital, which institution is 10 miles away. The college does not employ any full-time instructors even in such fundamental subjects as anatomy, physiology, physiologic chemistry, pathology and bacteriology. The Middlesex College of Medicine and Surgery might have been of the type of medical school in existence a generation ago, but it cannot now be countenanced as an institution capable of supplying the education necessary to enable one to practice the healing arts. We, the grand jury, find that the graduates of the Middlesex College of Medicine and Surgery are deficient in the knowledge which is necessary that they should have to protect the public from contagious or infectious diseases. The college standards are low, the equipment is inadequate, and the teaching can properly be termed desultory."

Concerning the College of Physicians and Surgeons, Boston, the dean stated that the institution was not an eclectic institution and never had been; nevertheless its graduates were admitted to practice by the Connecticut Board of Eclectic Examiners.

> The jury stated that it was difficult to reconcile the action of the Connecticut Eclectic Society or the state board of eclectic examiners with honesty or intelligence in permitting graduates of this institution to become members of the medical profession as eclectic doctors graduating from an institution where eclectic medicine is taught and that it was evident that these persons feeling themselves deficient in the knowledge necessary to enable them to pass a proper examination resorted to subterfuge and fraud to obtain the privilege of practicing medicine in Connecticut. The jury added that when a young man at the outset of his professional career bases his right to take an examination to determine his qualifications for entrance to professional life on a deliberate falsehood and fraud, his professional career should be ended as soon as that fraud is discovered.

In regard to the Kansas City College of Medicine and Surgery the grand jury found that the paid teaching staff consists of two men who receive $100 a month, and that it is owned and operated by Dr. Date R. Alexander. There has not been a faculty meeting since 1915 and the grand jury found conditions existing in the college almost unbelievable.

> There were no persons connected with the college who had any knowledge of educational qualifications or the administering of an educational institution from the standpoint of efficiency. Diplomas are issued to applicants at a charge of approximately $200 each. This dishonorable traffic in diplomas was freely admitted by the head of the school coupled with the statement that hereafter the price would be higher. The attorney general for the state ruled that licenses issued under these circumstances were invalid. The jury stated that a lawyer's mistake might cost his client some money; the court could invariably correct his blunders but the blunders of such "physicians" were irremediable. The jury had also found on examining some of these persons holding medical diplomas that they could not describe the first symptoms of diphtheria, scarlet fever, smallpox, or other contagious or infectious diseases. The grand jury has not completed its investigation by reason of the operation of the law regulating the practice of the healing arts; it has diplomas, certificates, letters, reports, records and oral testimony but it does not feel that the interests of public justice would be served by publication of the evidence of any of their exhibits at this time.

ILLINOIS

Chiropractor Fined.—According to reports Adolph C. Krueger, Paris, chiropractor, was found guilty of practicing medicine without a license, February 29, and fined $100 and costs.

Health Promotion Week.—The governor has issued a proclamation designating the week commencing Sunday, April 20, as "Health Promotion and Safety Week." A program will be promulgated by the state health department.

Society News.—At a dinner in his honor given by members of the Adams County Medical Society Dr. Edward H. Ochsner spoke on "Some Medical Economic Problems"; Dr. Ochsner then spoke before the regular meeting of the society on "Chronic Fatigue Intoxication."——Dr. George Wilse Robinson, Kansas City, Mo., president of the Missouri State Medical Society, will address the Adams County Medical Society at Quincy, April 14, on "The Psychoses of the Dementia Praecox Group."

Chicago

Library for Northwestern.—Dr. and Mrs. Archibald Church have given $100,000 to Northwestern University to endow a medical library.

Personal.—Dr. John Gordon Wilson gave an address before the section of otology of the New York Academy of Medicine,

March 14.——Dr. Durward R. Jones, Chicago, will go to Rapid City, S. D., to develop a county health department under the auspices of the Rockefeller Foundation.——Dr. June L. Edmondson gave an address on "Health" at the Presbyterian Church, Streator, March 11.——At a recent meeting of the Kane County Medical Society, Drs. Paul B. Magnuson and James Oliver of Chicago, gave illustrated lectures on "Fractures" and "Skin Diseases," respectively.——Dr. Edwin B. Godfrey will soon go to Europe to do health work in the Balkans under the direction of the League of Nations. A campaign against typhus is under way.——William Francis G. Swan, professor of physics at the University of Chicago, has been appointed professor of physics at Yale University, New Haven, Conn.——Dr. H. Douglas Singer, Chicago, has been elected medical director of the Illinois Society for Mental Hygiene to succeed Dr. Ralph P. Truitt.——Dr. Gustav Kolischer spoke on "Urologic Fads," before the Chicago Medical Society, March 19.

IOWA

Radiologists Elect.—At the annual meeting of the Iowa Radiological and Physiotherapy Society in Des Moines, February 27-28, Dr. Benjamin H. Sherman, Dexter, was elected president; Dr. Thomas B. Lacey, Glenwood, vice president, and Dr. Walter E. Baker, Des Moines, secretary-treasurer. Dr. John Stanley Coulter, professor of physiotherapy, Rush Medical College, Chicago, gave an address.

Scott County Medical Society.—At a meeting of the Scott County Medical Society, March 4, in Davenport, Dr. Frederick H. Falls, of the State University of Iowa College of Medicine, Iowa City, gave a motion picture demonstration of obstetrical and gynecological case reports. This society, with the Rock Island County Medical Society, is planning a three-day clinical meeting to be held in Davenport and Rock Island and Moline, Ill., this fall.

KANSAS

Dr. Dykes Resigns from State Board.—Dr. Henry A. Dykes, Lebanon, has resigned as president of the state board of medical registration and examination. Dr. Dykes was secretary of the board for sixteen years. He will continue in charge of the U. S. Veterans' Hospital, Kansas City.

KENTUCKY

Personal.—Dr. Fred Rankin has resigned as professor of surgery in the University of Kentucky Medical School, Louisville, to become chief surgeon of the Lexington Clinic.——Dr. Mabel E. Elliott, Benton Harbor, Mich., delivered a lecture before members of the Kentucky State Legislature, March 5.——A dinner was recently given in honor of Dr. James A. Averdick, dean of Covington physicians, to celebrate the fiftieth anniversary of his practice of medicine in Covington.

MARYLAND

Personal.—Dr. Hugh H. Young, director of the James Buchanan Brady Urological Institute of the Johns Hopkins Hospital, will sail next week for Rome to attend the urological congress, April 23-27. Following the congress, Dr. Young and his family will tour Italy, Switzerland and France.

The Transportation of Milk.—To improve the transportation of milk to Baltimore a meeting under the auspices of the Baltimore City Health Department, with representatives of four railroads, representatives of truck lines and local dealers, was held, March 14. The director of the bureau of chemistry and food declared that the cooperation of handlers of milk was essential to keep milk at a proper temperature in transit in summer. A committee was named to meet at the city health department, March 18, to study the question further.

MASSACHUSETTS

Registration Revoked.—At a meeting of the board of registration in medicine, February 13, the registration of Dr. Horace G. MacKerrow (colored), Worcester, as a practitioner in Massachusetts was revoked. He is serving a prison sentence.

Honorary Fellows.—The Massachusetts Medical Society at a meeting in Boston, February 6, elected to honorary fellowship, Dr. Charles W. Eliot, president emeritus of Harvard University, Boston; Dr. William W. Keen, former professor of surgery, Jefferson Medical College of Philadelphia, and Benjamin White, Ph.D., director of the state health laboratory, Jamaica Plain.

Dietetic Association.—At a meeting of the Massachusetts Dietetic Association, April 8, an exhibit will be given of the available nutritional material in Boston by the Amherst Extension Division, the Boston Dispensary, the Children's, Peter Bent Brigham, Massachusetts General and New England Deaconess hospitals and the state house. Dr. Elliott P. Joslin will address the association, May 13, on "The Dietitian's Responsibility for the Prevention and Treatment of Diabetes."

State Board Attacked.—It is reported that an attempt is being made to oust the Massachusetts State Board of Registration in Medicine. At a hearing before a legislative committee, March 12, it was charged that the state board failed recently in its duty in connection with a case of malpractice that resulted in the death of a woman. The bill providing for the abolition of the board, it is said, is approved by the Massachusetts Medical Society. The chief opponents of the bill are associated, it is stated, with two Class C medical schools of the state.

MICHIGAN

New Combined Course at Ann Arbor.—The board of regents of the University of Michigan Medical School have approved a combined course in pharmacy and medicine for students who wish to prepare for scientific careers in research laboratories, or for educational, scientific or pharmaceutical manufacturing institutions. The new combination course requires three years in the College of Pharmacy and two years in both the pharmacy and the medical schools. The five years of study leads to a degree of bachelor of science in pharmacy. Two more years in the medical school will give the degree of doctor of medicine.

MINNESOTA

Surgical Society Election.—At the third annual meeting of the Minneapolis Surgical Society, March 6, the following officers were elected: president, Dr. Archa E. Wilcox; vice president, Dr. Arthur A. Zierold, and secretary-treasurer, Dr. Willard D. White. This society, which was organized in 1922, has a clinic day once a month at some hospital in Minneapolis; a pathologic conference is held in the afternoon, and a dinner and the scientific program in the evening.

Personal.—Dr. James K. Anderson, Minneapolis, has been appointed medical director of the Deerwood Sanatorium, Deerwood.——Dr. Alfred W. Adson, Rochester, delivered the Joyce Memorial Lecture in Portland, Ore., February 14. His subject was "Trifacial Neuralgia."——Friends of Dr. Amos W. Abbott, Minneapolis, gave a dinner in his honor, March 1, at the City Club on the anniversary of his fifty-fifth year in practice.——Dr. Charles H. Patterson, Barnesville, has been elected chief of staff of St. Ansgar's Hospital, Moorhead.——Dr. B. L. Laver, Guy's Hospital, London, England, is spending several months at St. Mary's Hospital (the Mayo Clinic), Rochester.——Dr. Homer R. Swift, Rockefeller Institute, New York City, gave a Mayo Foundation lecture, February 19, on "Rheumatic Fever."——Dr. Porter P. Vinson, Rochester, gave a lecture on "Cardiospasm" before the Cincinnati Oto-Laryngologic Society, February 26.

MISSOURI

Trachoma Survey.—The U. S. Public Health Service has inaugurated a laboratory investigation of trachoma and has detailed Ida A. Bengston of the hygienic laboratory, Washington, D. C., to the work. Headquarters will be maintained in the bacteriologic labortory, department of hygiene, of the Missouri School of Mines and Metallurgy. The work is in collaboration with the Trachoma Hospital maintained in Rolla by the public health service.

NEW JERSEY

Hospital News.—A building to cost from $300,000 to $500,000 is planned for Christ Hospital, Jersey City.

Personal.—Dr. Edward J. H. Salmon has been appointed acting health officer of Jersey City succeeding the late Dr. Joseph Craven.——Dr. William Seaman Bainbridge, New York, has been appointed to the consulting staff of the Bergen County Hospital, Ridgewood.

NEW YORK

Three Outbreaks of Trichinosis.—Recently there came to the attention of the state department of health reports of three outbreaks of trichinosis, one in Rochester, one in Yonkers and one in Patterson, Putnam County. There were in all nineteen cases and three deaths. The laboratory confirmed the diagnosis in all cases, which were traced to eating raw pork.

Farm for Incorrigibles.—The Berkshire Industrial Farm, a school for the "problem boy," at Canaan, is soon to cooperate

with the Commonwealth Fund of New York City, in a study of conduct disorders. The Berkshire Industrial Farm has a trade school and a new infirmary for the observation and treatment of "disturbed" cases. Dr. Clinton P. McCord, consulting psychiatrist to the farm, and director of the mental hygiene in the public schools of Albany, will direct the psychiatric research work. There will also be a resident psychologist, a social worker and a secretary. The aim of this project is to make an intensive study of conduct disorders under prolonged observation and control. Work will start as soon as the staff has been secured.

Public Health News. — The state health department announces that it wishes to obtain blood from persons convalescing from measles. Donors will receive from $10 to $15 according to the amount of blood given and physicians who obtain it will receive from $10 to $25 per case. The blood should be taken between the tenth and sixteenth day after the fever subsides.——The district state health officer has notified the sanitation division that the water authorities of St. Johnsville have turned water from a nearby stream into the village reservoir after notifying the health officer, as required. Notices were immediately posted warning the people to boil drinking water. Local water officials are warned not to use additional supplies of water until the health department has pronounced it safe.

State Hospitals Make Financial Showing. — The annual financial report submitted to the legislature by the state hospital commission for the fiscal year 1923 shows a total disbursement of $14,386,834, a decrease of $1,660,182 from the previous year. The average daily number of patients cared for in the thirteen civil state hospitals was 37,936, and the general average per capita cost of maintenance was $327.86 as compared with $333.07 in 1922, and $377.54 in 1921. Marked progress has been made in the construction of new hospitals at Marcy and Creedmoor. A new reception building to accommodate 200 patients was opened at Central Islip and other buildings of similar character at Kings Park State Hospital. At Willard State Hospital a new tuberculosis pavilion to house forty-two men has been practically completed. The hospital farms show a total net profit of $249,728, a gain of $103,554, as compared with the previous year.

Typhoid Fever Explained. — Interesting data have been obtained in connection with three fatal cases of typhoid fever which recently occurred in one family. Two weeks prior to the onset of illness, two of the victims had visited a farm on which a typhoid carrier was discovered subsequently. At the onset of the first case the attending physician urged the three nonimmune members of the family to have typhoid vaccine administered. Of the two who took the vaccine one did not come down with the disease; the other one received one inoculation only and that when she was already coming down with typhoid fever. The third nonimmune refused to be inoculated with the antityphoid vaccine, and continued to care for the two already ill. She developed the disease and died. Investigation by the department of health disclosed a typhoid carrier on the farm which members of the afflicted family had visited. This carrier gave a history of typhoid fever forty-six years ago; fifteen years ago one of the carrier's children had the disease; two years ago two people came down with typhoid shortly after visiting the home of the carrier; and last summer a man working on the farm acquired the disease. A case of typhoid fever also occurred in each of two neighboring families. An epidemic of typhoid fever in a neighboring city occurred six years ago. It appears that at the time, milk from the carrier's farm was being sold in that city.

New York City

Gift to Promote Pediatric Research Work.—Dr. Livingston Farrand, president of Cornell University, recently announced the receipt of an anonymous legacy of $200,000 for the establishment of an endowment fund for research work in the department of pediatrics.

Medical Film.—A temporary injunction has been obtained in the Manhattan Supreme Court restraining the board of health from interfering with the showing of the medical film noted in last week's JOURNAL. The board of health objected to this picture on the grounds of public morals.

New York Post-Graduate School Lectures.—The course of free lectures to the medical profession which has been conducted by the New York Post-Graduate Medical School and Hospital during the winter will be concluded with the following lectures: April 4, "Roentgen Therapy," by Dr. William H. Meyer; April 14, "Radium in Diseases of the Skin," Dr. A. Schuyler Clark; April 25, "The Diagnostic Significance of Abdominal Pain," Dr. Ludwig Kast.

In Honor of Dr. Holt.—At the memorial services at the New York Academy of Medicine, March 12, the Rev. Dr. William H. P. Faunce, president of Brown University, and Dr. Simon Flexner spoke on "Dr. Holt, the Man"; Dr. John Howland on "Dr. Holt, the Physician"; Dr. Henry L. K. Shaw on "Dr. Holt, a Pioneer in Social Medicine," and Dr. George David Stewart on "Dr. Holt, Trustee and Fellow of the Academy of Medicine." Dr. Royal Storrs Haynes was in charge of the meeting. Students at the College of Physicians and Surgeons have contributed toward a memorial tablet to be placed in the New York Academy of Medicine.

Typhoid Carrier in Restaurant.—Alphonse Cotils, owner of a bakery and restaurant at 242 West Sixteenth Street, who had a permit from the department of health, was recently arraigned for violating Section 146 of the Sanitary Code, which relates to handling food. Cotils was proven a typhoid carrier last year when he asked for renewal of his food handler's card. Magistrate Cobb found Cotils guilty but suspended sentence, and stated that the burden was on the health department to exercise police powers if it thinks necessary. This is the first typhoid carrier case to be presented to a court since the notable case of Typhoid Mary about seventeen years ago.

Academy of Medicine Report on Church Healing.—According to an opinion expressed recently by the public health committee of the New York Academy of Medicine, this committee is disposed to recognize religious healing only when the clergyman assists the physician of the patient suffering from nervous, mental and personality disorders, and only when this spiritual assistance is supervised and carried on in a medical instead of a clerical environment. The committee expressed opinions on other nonphysical treatments. It reiterated that Couéism employs no new force. The report states that a technic has been developed by which any help gotten through hypnotic force is easily and simply obtained without involving the individual who employs it in any extraneous beliefs. The committee recognizes the importance of occupation therapy in hospitals, and believes that its benefits have not been sufficiently appreciated; it has been established in less than half a dozen general hospitals in New York. Occupational therapy, the committee says, should be studied thoroughly before being applied.

NORTH CAROLINA

Tuberculosis Clinics.—Free tuberculosis clinics were held throughout Wake County from March 3-15. The health department for several weeks has been obtaining the names of persons suspected of having tuberculosis. The itinerary for the clinic was arranged by the state and county health departments.

OHIO

The Increase of Cancer.—According to the bureau of vital statistics, state department of health, deaths from cancer are increasing in Ohio and the percentage increase is more rapid than the gain in population. From 4,792 deaths from cancer in 1918 the number steadily increased until in 1922 it was 5,552, of which 3,204 were of females as against 2,348 of males; only 148 cancer deaths were noted among negroes.

Hospital News.—Dedication ceremonies and public inspection of the new Riverside Hospital, Warren, will take place, April 12. Drs. A. J. Ochsner and Henry Schmitz of Chicago will speak.——The expansion of the White Cross Hospital, Columbus, will involve an outlay of about $700,000. A nine-story steel and stone structure will be erected on the south side of the present institution; two stories will be added to the old hospital and the building formerly occupied by the medical college will be converted into an administration building.——The Cleveland Homeopathic Hospital Society has purchased a four-acre tract on the Forest Hill estate of John D. Rockefeller as a site for a new hospital. Construction will start soon.——Plans and specifications for a $500,000 wing to Miami Valley Hospital, Dayton, are complete and construction will start in April.——Construction of the Cincinnati Children's Hospital will commence this spring. An administration building and left wing will be erected, and a right wing will be added when needed. One hundred and fifteen beds will be available for children up to 15 years of age.——A seven-acre tract at Akron has been acquired for the proposed Catholic hospital, St. Thomas' Mercy.——The formal opening of the addition to the Good Samaritan Hospital, Zanesville, took place January 30-31. Physicians of the city and adjoining territory were guests of the hospital at a dinner January 31.

OREGON

University Hospital Opened.—Dr. Amos Orville Waller has been named chief of the medical staff of the new Pacific Christian Hospital at the University of Oregon, Portland, which was formally opened, March 10. About eighteen physicians will be connected with the new hospital.

PENNSYLVANIA

Harrisburg Academy of Medicine.—At the last meeting of the academy the following officers were elected for the ensuing year: president, Dr. Carson Coover; vice presidents, Drs. C. M. L. Dailey and Richard J. Miller, and secretary-treasurer, Dr. Gilbert L. A. Dailey.

The Bedford Lecture.—The third Bedford lecture of the Pittsburgh College of Physicians will be given by Dr. Frank Smithies, Chicago, professor of medicine, University of Illinois. The subject will be "The Origin and Development of Ethics in Medicine and Their Influence on Medical Practice."

Revoked and Restored Licenses.—At a meeting in Harrisburg of the state board of medical education and licensure, February 28, the licenses of Dr. Horace L. Kulp, Ardmore (revoked, June 2, 1920) and of Dr. James B. Graff, Portage (suspended, August, 1923), were restored and the licenses of Drs. William H. Bricker, Jr., Philadelphia (malpractice), and John A. Mason, Philadelphia (violation of Harrison Narcotic Law), were revoked.

County Hospital Site Opposed.—The Tuberculosis Society of Harrisburg and Dauphin County at its annual meeting, January 29, adopted the following resolution:

Resolved, That the Tuberculosis Society go on record as opposing the location of the county tuberculosis hospital, authorized by the voters at the general election in November, 1922, on the poor farm as is contemplated by the County Commissioners according to recent newspaper reports.

This action was taken as the result of the proposal that a building recently erected at the county home as a pest house be used as a county tuberculosis hospital. Objections have been raised to the proposed building because it is on low ground and on a poor farm.

Philadelphia

Joint Society Meetings.—Joint meetings of the New York Surgical Society and the Philadelphia Academy of Surgery were held in the University Hospital, March 12. The following program was presented: Dr. Thomas C. Stellwagen: "Two Cases of Carcinoma of the Kidney"; Dr. John H. Gibbon: "A Case of Hypernephroma in a Child of 3 Years"; Dr. George P. Muller: "Cases of Lung Abscess"; Dr. Chevalier Q. Jackson: "Chalk Talk on Bronchoscopy in Diseases of the Lung"; Dr. Gabriel F. Tucker: "Moving Picture Demonstration of the Bronchoscopic Treatment"; Dr. Joshua Edwin Sweet: "Parietal Sacculi of the Bile Ducts"; Dr. John G. Clark: "The Present Status of Radium in Pelvic Carcinoma"; Dr. John H. Jopson: "A Case of Fracture Dislocation of the Radius and Ulna and a Case of Separation of the Lower Epiphysis of the Femur and Fracture of Both Bones of the Leg"; Dr. Astley P. C. Ashurst: "Excision of a Bronchial Fistula and Exenteration of the Nasal Passages and Sinuses for Adenocarcinoma"; Dr. John Speese: "Insulin as an Adjunct to Surgery"; Dr. Walter Estell Lee: "Jejunostomy in Intestinal Obstruction," and Dr. John B. Deaver: "Remarks on Fecal Fistula."

TENNESSEE

Personal.—Dr. Young W. Haley was elected chairman of the governing board of the Nashville General Hospital to succeed Dr. Rufus E. Fort.

Hospital News.—The contract has been let for the erection of a wing to the Crook Sanatorium, Jackson, at an approximate cost of $100,000.——A group of Knoxville business men have announced that a sanatorium will be erected on the site of the Neubert Springs Hotel which was recently destroyed by fire. The institution will cost about $100,000.

TEXAS

Memorial Clinic Opened.—The formal opening of the Freeman Memorial Presbyterian Clinic, Dallas, was held, March 3. The building was the gift of Mr. and Mrs. Percy R. Freeman as a memorial to their son.

Health Survey.—A. F. Allen, a sanitary engineer of the U. S. Public Health Service, has been assigned to make a public health survey of Houston with the aid of Dr. Arthur H. Flickwir, city health officer. The survey is one of several undertaken to develop a bureau of information in Washington, D. C., to serve health departments and to study and analyze public health service.

VIRGINIA

Medical Students Study Health.—A group of medical students from the School of Public Health of Johns Hopkins University, Baltimore, are in Richmond studying health conditions in that vicinity. They will stay in the city several weeks and will be shown local conditions by officers of the health department and the department of public welfare.

CANADA

Hospital in Far North Burns.—Cables received state that Dr. Wilfred T. Grenfell's most northern hospital, situated at North West River, Labrador, burned to the ground March 14. No lives were lost but all of the equipment was destroyed.

A Half Million to Fight Tuberculosis.—According to the London *Times*, Lord Atholstan, who has been conducting a crusade in the Montreal *Star* against tuberculosis, has offered the Quebec government $500,000 to aid in combating that disease. He suggests that a demonstration be held similar to the one at Framingham, Mass., which was under the direction of the National Tuberculosis Association (THE JOURNAL, April 28, 1923, p. 1267).

Hospital News.—St. Michael's Hospital, Toronto, Ont., has made application to have closed a public lane which divided the site on which the addition to the hospital will be erected. The total cost of the new extension will probably be more than $1,000,000. A ten-story scientific wing will accommodate laboratories, a roentgen ray, research and similar departments; a seven-story wing will be used largely for additional ward space, increasing the capacity of the inpatients' department to 500 beds. Other improvements contemplated are an outpatients' department large enough to permit fourteen physicians to do clinical work at one time, and an addition to the nurses' home.——The gift of a new nurses' home and accommodation for a central heating plant and other utilities to the General and Marine Hospital of St. Catharines, Ont., was announced recently by the board of directors. The donors are Col. and Mrs. R. W. Leonard, of St. Catharines. This gift represents an outlay of $100,000.——The Western Hospital, Toronto, Ont., will shortly hold a campaign to raise $250,000 for the construction of a nurses' home and a maternity wing.

GENERAL

National Child Health Day. — President Coolidge has approved the selection of May 1 as a national day for the observance of child health and welfare, the American Child Health Association has announced. Governors of states, commissioners of health and education and mayors of cities will be asked to lend official recognition to the movement.

Scholarships for Social Work.—The New York School of Social Work is offering fellowships for the study of social work to twelve men and women in colleges of the United States. Four awards of $1,200 each are open to graduating students of both sexes. Under the plan announced, fellowships will be granted on the basis of competitive examinations, and the latest date for filing applications is April 19. Ten fellowships have been reserved for college men in the junior and senior classes. These are for $155 each and are to cover tuition and living expenses for the summer session of 1924. Applications should be addressed to Porter R. Lee at 105 East Twenty-Second Street, New York.

National Health Council.—A field consultation service has been developed by the division on prevention of delinquency of the National Health Council. The service is intended for cities that are planning to develop mental-hygiene clinics on their own initiative and is supported by a special appropriation from the Commonwealth Fund. Cities not in a position to receive one of the demonstration clinics conducted by the division, may receive the services of a consulting psychiatrist and a consultant in psychiatric social work, who will remain with the new clinics a few months and assist in the organization. The division on prevention of delinquency has issued for general distribution a pamphlet on "The Mental Health of Children" and another on "A Child Guidance Clinic."

Appropriation for Training Reserves.—In the War Department appropriation bill reported to Congress by the Committee on Military Affairs appropriation is made for $3,318,000

for Reserve Officers Training Corps. This is $318,000 more than provided for the current year. This money will be available for military training of students at colleges and schools. Over 115,000 students now take part in this activity which is the principal source of officers for the Reserve Corps. For the Citizens Military Training Camps there is appropriated $2,100,000. This is $100,000 more than for the current year. This money will provide for the training at summer camps of approximately 28,000 young men this year. This number will be 3,000 in excess of the number who attended camps in the summer of 1923.

Malaria in Russia.—The American Friends Service Committee reports that the most serious medical problem in Russia is malaria. Last summer malaria incapacitated 80 per cent. of the people in one district. The crops were ungathered, and starvation overwhelmed these people. There will probably be a greater outbreak of malaria when the next hot season appears. The peasants have not been well nourished for years. They lack resistance, and have no means to fight disease. The American Friends Service unit in Russia has determined to meet the emergency, and since last year malaria clinics have been at work; over 90,000 patients have been treated and more than 1,800 pounds of quinin were used last autumn. The Friends are educating these people about malaria, but the peasants are superstitious and even unwilling to take treatment. The Friends have offered to assist the government in cleaning up the worst malarial areas, and engineers are planning drainage for which the Quakers will pay peasants who do the work. More quinin is needed; for the coming summer at least a ton more is absolutely necessary. Money is also needed to carry on this work.

Smallpox Situation.—In addition to the outbreak in the Province of Ontario, Canada, reports are at hand of many cases of smallpox in Alabama, Ohio, Connecticut, Michigan and other states. Forty cases are reported from Chagrin Falls, Ohio, and fourteen at Rayland. New Britain, Conn., reports nearly thirty cases, and fifty-nine have been found in Birmingham, Ala., twenty cases being reported within two days. Michigan has reported 421 cases, 140 of which are in Detroit. Vaccination is essential. In Windsor, Ont., there were over the week-end fifteen deaths and sixty additional cases. Twenty thousand persons in Windsor and the border cities were vaccinated, February 25. Later reports state that twenty-three cases have been found in Calgary, Alberta. Eight physicians and six nurses have been stationed at the ferry docks in Detroit to inspect persons from Ontario. Persons unable to show a certificate of vaccination within the last seven years will be vaccinated or admittance refused. Those who have died have all been unvaccinated persons, it is stated. Surg.-Gen. Hugh S. Cumming, U. S. Public Health Service, has ordered to Detroit Dr. Claude C. Pierce, district inspector, Chicago, and ten acting assistant surgeons to lend assistance.

American Aid for German Medical Science.—Dr. William F. Petersen, secretary of the committee, announces the following contributions obtained through medical organizations:

Albany County Medical Society (N. Y.)	$100.00
Allegheny County Medical Society (Pa.)	510.00
American Society of Biological Chemists	100.00
Chicago Pathological Society	34.40
Chicago Tuberculosis Society	25.00
Cincinnati Academy of Medicine	500.00
Denver City and County Medical Society	288.00
Dorchester County Medical Society (Ind.)	10.00
Dunn-Pepin County Medical Society (Wis.)	10.00
Dyer County Medical Society (Tenn.)	25.00
Eau Claire County Medical Society (Wis.)	120.00
Fairfax County Medical Society (Va.)	15.00
Gage County Medical Society (Neb.)	15.00
Lackawanna County Medical Society (Pa.)	759.00
Latrobe Academy (Pa.)	25.00
LaFourche Parish Medical Society (La.)	25.00
Lincoln County Medical Society (Neb.)	9.00
LaCrosse County Medical Society (Wis.)	183.00
Montgomery County Medical Society (Ala.)	25.00
New York Society for Experimental Biology and Medicine	710.00
Pettis County Medical Society (Mo.)	10.00
Schenectady County Medical Society (N. Y.)	100.00
Sonoma County Medical Society (Calif.)	50.00
Stafford County Medical Society (Kan.)	5.00
St. John-St. Charles Parish Medical Society (La.)	10.00
Will County Medical Society (Ill.)	45.00

Bequests and Donations.—The following bequests and donations have recently been announced:

Hollywood (Calif.) Hospital, $101,927 to furnish and equip the hospital, collected by the Hollywood Lions Club.

McKinney (Texas) City Hospital, $75,000 for a nurses' home by Fletcher B. Pope of that city.

New York Institute for the Blind, New York City, $50,000 by the will of Miss Reading Sterritt.

Beth David Hospital, New York City, $40,000 by officers and friends of the institution.

Arizona Deaconess Hospital, Phoenix, Ariz., between $35,000 and $40,000 by the will of Seth Hammond of that city.

Arkansas Children's Home, Little Rock, Ark., $36,000 by the will of Joseph Kendrick.

Anniston, Ala., for the establishment of a hospital, $25,000 by the will of Col. William H. Zinn.

Presbyterian Hospital, Chicago, $15,000 for memorial rooms by the will of Miss Lilly Ball of Valparaiso, Ind.

Malden (Mass.) Hospital, $10,000; the Associated Charities of Malden and the Malden Home for Aged Persons, each $5,000 by the will of Marcus Beebe of Malden.

American Pharmaceutical Association, for the headquarters building, $10,000 from Johnson and Johnson; $3,000 from Lehn and Fink and $3,000 from Muth Brothers.

Maine General Hospital, Portland, Me., $3,000 under the will of Margaret Card of Portland.

Erie (Pa.) Antituberculosis Society, $1,500 by the will of Isaac Ostheimer.

The American Red Cross and the Masonic Asylum of New York, $1,000 each by the will of the late Dr. Samuel McCallum of New York City.

LATIN AMERICA

American Nurses Train Brazilians.—Forty-two American trained nurses are employed teaching nursing to Brazilian women in hospitals in Rio de Janeiro. They were sent by the U. S. Public Health Service at the suggestion of the Rockefeller Foundation.

Scientific Congress.—The third Pan-American Scientific Congress will be held in Lima, Peru, in November. This will be the first meeting since the World War and a large attendance is expected. The United States will be officially represented. The two previous congresses were held in Santiago, Chile, 1908, and in Washington, D. C., 1915.

FOREIGN

Personal.—The Medical Association of Central Portugal has elected Drs. A. Pessoa, president, and D. Lara, vice president. The secretaries are Drs. G. Albuquerque and J. M. Landeiro, all of Coimbra.——Prof. W. Laufberger of Brno has been granted 10,000 crowns by the Czechoslovakian government to continue his research on insulin.——Dr. Vera Scantlebury, chief medical officer, Victorian Baby Health Center, Australia, is investigating health centers in New York.——Dr. Ewald Tomanek, an official of the department of health, Czechoslovakia, has been granted leave of absence to engage in research on vital statistics at Harvard University, Boston, under the Rockefeller Foundation.

Smallpox in Switzerland.—In a report of the Swiss Federal Health Service, the smallpox epidemic of 1921 and 1922 is considered. Vaccination is compulsory in certain cantons but not in others, owing to antivaccination propaganda. During the entire epidemic, it says, there was not one case of smallpox in the cantons that require vaccination despite the fact that free communication existed between them and cantons where smallpox was epidemic. Thirteen cantons were affected and 1,159 cases of smallpox were reported in 1922, in 92 per cent. of which vaccination had never been done. The total cost of the epidemic to the country (not including loss of time and labor) was nearly 740,000 Swiss francs. A campaign will be made to show the public the fallacy of the pernicious propaganda responsible for the extent of the epidemic.

Society News.—At the annual meeting of the Harveian Society of London, January 16, Dr. Reginald Dudfield was elected president; Drs. D. C. L. Fitzwilliams, Montague Smith, W. E. Falconar and C. M. Wilson, vice presidents, and Dr. G. de Bec Turtle, treasurer.——The Visiting Association of Throat and Ear Surgeons of Great Britain was organized in Edinburgh, January 25-26. Sir William Milligan was elected president. The organization was formed to enable members from different parts of the country to visit home and foreign clinics once a year.——The fifteenth congress of the German Roentgen Society will be held, April 27-29, in Berlin, under the presidency of Professor Wintz. Dr. Grässner, University of Cologne, is secretary of the society.——The twenty-eighth congress of French-speaking alienists and neurologists will be held at Brussels in April under the presidency of Dr. de Massary of Paris, Drs. Vermeulen of Ghent and Simon of Vaucluse will discuss mentally deficient children and Dr. Froment of Lyons disturbances of language.——The German Congress for Diseases of Digestion and Metabolism will be held, April 26-27. Professor von Bergmann of the Frankfort Medical Clinic will preside. Professor Fuld, Uhlandstrasse 157, Berlin, is secretary.——At the annual meeting of the British National Union of Scientific Workers, Prof. G. H. Hardy, Oxford, was elected president, and Dr. J. W. Evans, president of the research council of the union. A general scientific council, on the order of the General Medical Council, was discussed.

Deaths in Other Countries

Dr. **Alexander C. O'Sullivan,** professor of pathology in the University of Dublin, February 18, of septicemia.——Major Gen. **W. B. Bannerman,** M.D., Madras (India) Medical Service, February 3, aged 65, in Edinburgh, Scotland. Dr. Bannerman was formerly superintendent of the Bombay Plague Laboratory and received the Frontier medal with two clasps during the Burma campaign. He has been a fellow of the Philadelphia College of Physicians since 1908.——Dr. **L. Rethi,** professor of laryngology at Vienna.——Dr. **J. Deyl,** professor of ophthalmology at Prague.——Dr. **E. Holub,** Vienna, noted for his initiative in the founding of colonies for the insane.——Dr. **G. Vincke,** long at the head of medical matters in the Belgian Congo.——Dr. **G. Liebe,** director of the Waldhof sanatorium in Germany and writer on tuberculosis.

Government Services

Bill to Amend the "Manchu" Law

The House Committee on Military Affairs has concluded its hearing of testimony on Section 2 of House Bill 6354, which proposes to change the existing law to reduce the period which staff officers of the Army must serve with troops. This section of the bill has had the approval of Surg.-Gen. M. W. Ireland of the Army, who urged that the proposed legislation be adopted in order that available medical specialists and surgeons be preserved for assignments to duty in which they are most proficient; and separation from which assignments for performing duty with troops would be detrimental. Certain officers, testified General Ireland, were expected to perform special duties for which they are notably qualified. He approved the proposed legislation as calculated to help the situation in a satisfactory degree so far as it concerned the members of the medical corps of the Army. The consensus of opinion in the committee seems to favor legislation authorizing the Secretary of War to leave an officer where he is needed, with the proviso that the War Department make a report annually to Congress of such instances. Such report would prevent abuse of the privilege of being exempt from field service with troops. The hearing closed with the proposal that the bill be reported favorably to the House of Representatives.

Secretary Work Comments on Indian Medical Service

In a special report to the President on the activities of the Interior Department, Secretary Hubert Work calls the attention of the President to a comprehensive study of health conditions among Indians, which is being made by the National Health Council. The following is a copy of the report on the subject:

"A comprehensive study of health conditions among the Indians was inaugurated when the National Health Council on Oct. 31, 1923, accepted an invitation to undertake this task. This organization composed of the eleven medical and welfare associations of the United States has a large staff of officers, who are experts in matters of health, sanitation and hygiene. The National Health Council in making the survey will go into the field and visit practically all the Indian reservations, receiving every cooperation from the Bureau of Indian Affairs. Special attention will be paid to the preventive and curative medical services given the Indian wards of the government with the object of making suggestions and recommendations for their improvement."

New Bill on Physical Education

A bill for the promotion of physical education has been introduced in the House by Representative Bacon of New York. According to the terms of the bill, its purpose is "fully and thoroughly to prepare boys and girls of the nation for the duties and responsibilities of citizenship through the development of bodily vigor and endurance, muscular strength, skill and mental poise."

It provides for cooperation in such work with the states, and places control of it in the Commissioner of Education at Washington, who is required to make studies, demonstrations and reports to aid the states in the organization of physical education in elementary, secondary and normal schools.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 25, 1924.

The Prevention of Venereal Disease: Imperial Social Hygiene Congress

As many visitors from social organizations overseas are expected to visit this country during the summer for the coming British Empire exhibition, the National Council for Combating Venereal Disease has taken advantage of the opportunity to organize an imperial social hygiene congress, which will be held at the exhibition from May 12 to May 16. The congress will be opened by the minister of health, and a review of the existing situation will be given by the chief medical officer of the ministry and a medical member of the Scottish board of health. The dominions overseas and the crown colonies have been invited to send representatives, and therefore first-hand experiences of the various methods adopted in dealing with the difficult problem of preventing venereal disease are expected. Social hygiene in its national and international aspect will hold a prominent place. Attention will be given to the education problem. Prof. J. A. Thomson and Sir Frederick Mott will define the problem of training the young in positive sex control, stating the biologic and sociological reasons for maintaining a monogamous system of marriage and a stable family. Dr. Kay Menzies, who has organized with satisfactory results the venereal disease service in London, will preside over a conference of special interest to venereal disease officers of clinics on how to obtain the maximum efficiency of the clinic. Colonel Harrison, director of St. Thomas's Hospital Clinic, will open the discussion from the point of view of the clinic officer; Dr. Butterworth, health officer for Lancashire, will deal with the administrative aspect; Dr. Margaret Rorke will give her experience with women's clinics, and it is hoped that speakers from overseas will take part. A display of various types of propaganda films and material will be of especial interest to overseas visitors. An account of their use in this country and overseas will be given, and it is hoped that, where film propaganda can be used for the enlightenment of native races, the colonial governments will take steps to promote this. The position of the general practitioner in the antivenereal disease scheme will be considered, and a display of technical medical films will be given. A discussion, which should prove interesting, will take place on methods of enlightenment for illiterate races.

The Census of India

The fifth uniform census of India was taken in 1921, but so vast is the task of compilation that the final report has only just reached this country. The outstanding fact chronicled is a small increase of population (1.2 per cent.) in the decade that has elapsed since the previous census. That showed an increase of more than 7 per cent. The main cause of the difference was the great influenza epidemic of 1918-1919, which in the course of a few months was known to have swept away 6,000,000 people. The census has established the fact that double this number perished, amounting to 4 per cent. of the vast population of India. According to the present census, the population amounts to 319,000,000. The case mortality of the epidemic was about 10 per cent., and on this basis the number of persons affected was 125,000,000, or two fifths of the whole population. The scourge came when the economic power of the people had been greatly reduced by a succession of bad seasons. India remains predominantly agricultural. No less than 73 per cent.

of the people are engaged in agricultural and pastoral pursuits. Industry supports one tenth of the population. A noteworthy social change, arising from European influence, is a decline in the custom of child marriage, which is bound up with religious ideas. Forty years ago, only 481 females per 10,000 between the ages of 10 and 15 were unmarried. The proportion now is 601. Between the ages of 5 and 10, the advance of the number unmarried has been from 874 to 907.

Vital Statistics in 1923

The registrar-general's return for 1923 has just been issued. It was possible in a previous letter to make a preliminary announcement showing that the year was the most healthful ever recorded in this country. In London, the relative absence of influenza had a great effect on the respiratory group of diseases. Thus, while in 1922 there were 12,365 deaths from bronchitis, pneumonia, etc., there were only 8,676 in 1923. The deaths from influenza were, respectively, 2,582 and 752. The table shows in order of frequency the chief fatal diseases in the last three years:

	1921	Deaths	1922	Deaths	1923	Deaths
1	Respiratory disease	10,011	Respiratory disease	12,365	Heart disease	9,380
2	Heart disease	8,957	Heart disease	9,821	Respiratory disease	8,676
3	Cancer	5,807	Cancer	5,913	Cancer	6,162
4	"Consumption"	4,699	"Consumption"	4,722	"Consumption"	4,237
5	Digestive disease	4,503	Digestive disease	2,954	Digestive disease	3,352
6	Apoplexy	2,314	Influenza	2,582	Apoplexy	2,462
7	Old age	2,169	Apoplexy	2,578	Old age	1,887
8	Chronic interstitial nephritis	1,871	Old age	2,108	Accident	1,511
9	Accident	1,292	Measles	1,559	Chronic interstitial nephritis	1,330
10	Diphtheria	1,131	Accident	1,507	Influenza	752
11	Influenza	1,006	Chronic interstitial nephritis	1,458	Diphtheria	602

It will be seen that, during 1923, heart disease became the most frequent cause of death, while cancer retained the third place with an increased number, and consumption retained the fourth place with a reduced number.

The Journal of Cancer Research

Under the auspices of the Cancer Research Fund of Ireland there has appeared in Dublin the first number of the *Journal of Cancer*, a publication devoted entirely to cancer. It will be issued quarterly at the price of 60 cents. In an editorial foreword, the problem of cancer is described as of the utmost national importance, and the belief is expressed that we are on the eve of a great discovery. Contributions are invited from specialists and others in all parts of the world. Another editorial on the progress in the treatment of cancer follows, in which deep roentgen-ray treatment is extolled as not only destroying cancer cells but also causing a specific inflammatory condition in which aggregation and autolysis of leukocytes play an important part, ending in the production of connective tissue. The combination of roentgen rays with diathermy and endocrine therapy is considered promising. An article on deep roentgen-ray therapy is contributed by Dr. W. Pilger, formerly of the Erlangen clinic, Bavaria, who is now in charge of the electromedical department of the city of Dublin skin and cancer hospital. He reports a number of encouraging results, but admits that in his reports he has chosen patients who have done well. His method is based on the principles of the Erlangen school, using the symmetrical apparatus with gas and Coolidge tubes. Prof. H. Wintz of Erlangen describes the preliminary and after-treatment in roentgen-ray therapy. Dr. Rumpf, of the research department of the Erlangen clinic, describes deep roentgen-ray therapy in gynecology. The number concludes with a highly theoretical article on the cancer problem, which is considered mainly from the biochemical standpoint. The contents of the next issue (which will appear in April) are announced. Like the first, the articles are all from either Irish or German pens, excepting one by a London dentist, Mr. F. St. J. Steadman, on oral sepsis as a predisposing cause of cancer. It is curious that while the metropolis of the British Empire, with its numerous medical schools and many organizations for research, and the great attention now given there to cancer research has no periodical devoted to cancer, the comparatively small Irish metropolis should have started one.

Pensions for Roentgen-Ray Martyrs

The London divisional council of the National Drug and Chemical Union has passed a resolution calling on the government to make provision by pension for those who, as roentgenographers in hospital work, have contracted roentgen-ray dermatitis and who suffer permanent disablement in consequence. The most recent case is that of Mr. Reginald Blackall, for twenty years roentgenographer to the London Hospital, who has lost both hands. An honorary certificate and an allowance of $375 a year has been awarded to him by the Carnegie Hero Fund Trustees.

A Special Form of Insurance for Physicians

The "Society for Relief of Widows and Orphans of Medical Men," which was founded in 1788, is a unique organization, for it is both a mutual provident and a beneficent society. Membership is open to any registered physician who, at the time of his election, is resident within a 20-mile radius of Charing Cross (which means London and a small area around it). But should any member move after election, even to places beyond the British Isles, he nevertheless, provided he has conformed to the by-laws, remains a member of the society. The annual subscription for a member under 40 years of age at election is $10; over 40 and under 50, $15; over 50, $20. The widow of a member who has an income under $625 receives a grant of $400 a year, and each orphan up to the age of 16 receives a grant of $250 a year; thus, for a trifling annual payment, a member who dies before he has been able to make provision for his dependents will not leave a widow and orphans unprovided for. If, on the other hand, he has been able to provide for them, his subscription will help to alleviate the lot of his less successful brethren. Sir James Paget, at one time president of the society, well said: "Membership of this society is either the best investment or the best charitable offering a medical man can make."

PARIS

(From Our Regular Correspondent)

Feb. 22, 1924.

Instruction in Anatomy in France and the United States

From time immemorial, instruction in anatomy has been regarded in France as the basis of medical study. It is given for two years in the winter, when dissection is more tolerable and when cadavers are more plentiful. The lack of refrigerating facilities for cadavers necessitates using them promptly. The plan of using two winters and omitting the summer between makes it possible for students to adjust their clinical and physiologic knowledge to what they have learned in anatomy; for example, observing a sprained ankle in the hospital would make a dissection of the foot more interesting and help fix the anatomy in mind.

But the constant expansion of the biologic sciences and of the specialties has started a movement to condense into one year the instruction in anatomy, histology and embryology, which heretofore has been given in two winters. Dr. R. Picqué, agrégé professor at the University of Bordeaux, who is interested in this problem, made another trip to the

United States to study anatomic departments that he visited in 1919. He visited on this trip the laboratories at Baltimore, Boston, New York and Philadelphia, and in a recent article in the *Presse médicale* gave a report of his impressions. It is true, he said, that instruction in the morphologic sciences is confined to one year, but it is accomplished by remarkably efficient organization. Picqué says that an American anatomic laboratory is "a humming factory where everybody works from 9 in the morning until 5 in the evening, with a short respite at 1 o'clock for a lunch, which is taken in the laboratory." Since the student does not leave the department all day, a better distribution of instruction is possible than with us. In France, the student goes to the hospital in his first year of study. In the United States, the first year student is at the anatomic laboratory from morning till night, and the long quiz periods which follow immediately his dissection makes the work effective. With us, the preliminary study of osteology causes the student to lose a month of dissection, while in the United States students study bones by themselves.

It is not only better use of their time that distinguishes instruction in anatomy in the United States. The better results are due also to a system that insures a supply of material; to equipment that conserves this material, and to the technical personnel that looks after it. Dr. Picqué states that at Baltimore, in the Carnegie Laboratory of Embryology, there are thousands of human embryos and fetuses. Gynecologists and obstetricians do not forget that anatomists need these, and there are not, as with us, pusillanimous boards that, on so-called humanitarian grounds, oppose sending material to laboratories. The supply of cadavers is turned to good account by the great care taken to preserve and distribute it economically. There is no laboratory of anatomy in the United States that does not have refrigerating apparatus, whereas the only school in France so equipped is the Ecole d'application de médecine et de pharmacie militaires in Val-de-Grâce. Cadavers, after injection, are covered with petrolatum and wrapped completely in roller bandages. Thus the waste of material through drying in vaults and through decay on dissecting tables is prevented. It is owing to this conservation of material that one finds a hundred or more adult cadavers in reserve in refrigeration rooms—not to speak of cadavers of children and of lower animals after the first distribution has been made to students. Aside from gross dissection, students have an opportunity to pursue studies of preparations, roentgenograms and serial sections. American laboratories are not only supplied with equipment; they are provided also with trained personnel.

If we seriously contemplate confining instruction in anatomy to one year, we must realize what we need: better facilities to conserve cadavers, larger collections of specimens, more technical assistants and more full-time instructors. Before we can have these, we must have larger appropriations, which it may be unreasonable to expect at this time. The budgets of our medical schools are ridiculous when we consider that the anatomic department of the University of Minnesota Medical School receives a regular annual appropriation of $30,000 and the university an annual appropriation of $3,000,000, not to mention special appropriations for the extension of various services.

It goes without saying that to reduce the time devoted to the study of anatomy to one year, we shall have to abolish clinical work in the first year; even in the United States, after a strenuous year devoted to gross anatomy and histology, it is necessary to make applied anatomy an elective course in the second year.

Committee on Hygiene of the League of Nations

The Committee on Hygiene of the League of Nations, whose seventh meeting has just been held at Geneva, has been organized on a new basis. Through an agreement with the International Bureau of Public Hygiene, the former Committee on Hygiene of the League of Nations has been decidedly modified. The new permanent organization is now served by the International Bureau of Public Hygiene in an advisory capacity. The new committee consists of fifteen members, nine chosen by the international bureau and six by the council of the League of Nations. France is represented by Prof. Léon Bernard and Dr. Reynaud.

Physicians and the Housing Situation

A medical society recently passed a resolution which was in part as follows: "Owing to the housing crisis and the persistent disinclination or refusal of landlords to rent to physicians, the population of Paris is threatened with a dearth of physicians." Dr. J. M. Le Goff raises the question in the *Gazette des hôpitaux* whether this cry of alarm is well founded. Is it true that a new physician cannot open an office in Paris because of what is termed "the housing crisis"? Is it true that the population of Paris will soon suffer from a lack of physicians? Records show that from August, 1922, to July, 1923, 144 physicians opened offices in Paris. Is this number lower than in the years before the war? The accompanying table gives the number of physicians who established themselves in Paris since the year of the Exposition Universelle (1900):

Years	Number of Physicians in Paris	Increase or Decrease Over Previous Year
1900	2,990	
1901	3,101	+ 111
1902	3,235	+ 134
1903	3,342	+ 107
1904	3,410	+ 68
1905	3,558	+ 148
1906	3,700	+ 142
1907	3,815	+ 115
1908	3,901	+ 86
1909	4,048	+ 147
1910	4,165	+ 117
1911	4,233	+ 68
1912	4,348	+ 115
1913	4,335	— 13
1914	4,443	+ 108
1922	3,930	— 513
1923	4,139	+ 209

It appears that, from 1900 to 1914, the annual increase of physicians in Paris was variable. In 1904 and 1911 the increase was 68; in 1909, 147; in 1905, 148. There was a decrease of 13 in 1913, when there was no housing crisis. From 1901 to 1914, 1,453 physicians located in Paris, or an average of 103 a year, whereas, from August, 1922, to July, 1923, 144 physicians opened offices, or forty-one more than the average for fourteen years before the war.

Dangers from the Use of Petroleum Benzin

The public health commissioner attached to the prefecture of police has investigated the use of petroleum benzin in hair-dressing parlors, which have had accidents. Not only have women been seriously burned, but explosions of this material have occurred in sewers when cleaners with lamps have gone into them. The health commissioner has ordered that the use of the product be discontinued.

The Abuse of Athletics

At a recent session of the Academy of Medicine, Dr. Maurice Boigey presented an interesting communication on the duration of cardiovascular disturbances produced by exercise. He noted the changes in arterial tension during intensive effort and during rest. He made a vascular tracing during repose, during exercise and after exercise. A series of tracings at intervals was made until the stylet recorded a graph similar to that secured in repose. The time that

elapsed between the end of the intensive effort and the moment when the graph had become normal again showed the duration of the vascular disturbances. From observations carried out for years at the Ecole de gymnastique at Joinville, on the most diverse types, it appears that the cardiovascular system is affected much longer by exercise than is commonly believed. As a rule, the recumbent position after violent exercise shortens perceptibly the duration of cardiovascular disturbances. The habit of lying down after contests should, therefore, be encouraged. Progressive training for severe exercise and athletic events likewise shortens the duration of circulatory disturbances following exercise. The duration of exercise has a more disturbing influence on the circulation than the intensity of the exercise. Games characterized by intermittent muscular effort, in which intervals of rest are frequent—very short but sufficient to prevent undue heart strain—appear as the most salutary form of exercise from the standpoint of the circulation; they affect the heart in fractional doses, as it were. They have not the disadvantages of athletic contests, which demand a maximum effort without any respite.

As the result of this report a committee on athletics and physical education has been appointed. The committee is composed of ten members, two of whom are physiologists (Gley and Hallion) and one a physician (Broca).

Compulsory Notification of Paratyphoid Fevers

In the new list of notifiable diseases (The Journal, Feb. 23, 1924, p. 644), typhoid fever heads the list, but no mention is made of paratyphoid fever. Professor Vincent has drawn attention to this regrettable omission, and, at his suggestion, the Academy of Medicine has unanimously recommended that paratyphoid fever be included among diseases for which notification is required. The superior council of public health of France approved the recommendation.

New Medical Journal

The first issue of the *Bulletin d'histologie appliquée à la physiologie et à la pathologie et de la technique microscopique* has appeared. This journal, under the direction of Professor Policard of Lyons, will be published monthly. Each number will contain original articles, reviews, a technical bulletin, minor notes, proceedings, news, book notices and a bibliographic index.

Death of Dr. de Beurmann

The death of Dr. de Beurmann, formerly physician to the Saint Louis Hospital, has been announced. His research on sporotrichosis was his most important work. Soon after the publication of the first American articles on multiple subcutaneous abscesses caused by the sporothrix, first isolated in pure culture by Schenk, de Beurmann discovered in similar cases a fungus to which Matruchot and Ramond gave the name *Sporotrichum* beurmanni. In collaboration with H. Gougerot, de Beurmann published, in 1912, a work on sporotrichosis. He is the author of a series of articles on leprosy and various tropical diseases which he studied on journies to all parts of the world.

BELGIUM

(From Our Regular Correspondent)

March 1, 1924.

The Birth Rate in the Congo

The infantile birth and mortality rates in the Belgian Congo cause some concern in government circles, and, not long ago, they were discussed by the council of ministers. The secretary of state for the colonies is well informed on this subject. The ignorance of mothers concerning hygiene, and respiratory intestinal and parasitic diseases, led to a plan to organize a school of midwifery for the natives. It should not be forgotten that malaria presents a danger just as real, and that an antimalarial campaign would be one of the best of crusades to raise the birth rate. The enormous quantities of quinin necessary for a campaign caused the government to request Dr. Dryepondt of the colonial and maritime department to experiment with the cultivation of cinchona trees to supply quinin to the government of the Congo.

Osteochondritis

At the recent Journées médicales de Bruxelles, Dr. Massart reported a series of cases of osteochondritis of the hip, in which the lesions were not localized in the epiphysis of the femur. He showed by roentgenograms the stages in the evolution of these lesions. Formerly, any chronic arthritis developing over a period of several months was considered of bacterial origin. Massart did not venture an opinion concerning the etiology and pathogenesis of pseudocoxalgias. He stated, nevertheless, that a thorough examination of children affected with osteochondritis did not reveal a higher percentage of hereditary syphilis than was found among children suffering from fracture or rickets.

Republication of Belgian Journal

Dr. Falloise has begun again the publication of the organ of the Ligue national belge contre la tuberculose, which was discontinued during the war.

A Hospital Ship on the Congo

The small number of physicians in the colonies, and the need of public health service along the Congo, have raised the question whether a hospital ship on the Congo River and its branches can make up in part for the lack of hospitals and render a great service to the native population. The daily papers demand that such a hospital ship be established, and they submit arguments in its favor. The creation of mobile hospital units with a wide range of action would overcome the disadvantages of fixed hospitals. The mobility of a ship would be a distinct advantage in epidemics. The service would be prompt, and could be given in the region most threatened. Equipped with telegraph or wireless, the ship could be summoned quickly, and it would insure the rapid transport of patients under first-class hospital conditions.

The saving from this arrangement would be considerable, and it would obviate the necessity of erecting many expensive hospitals. A subscription fund has been opened, and the subscriptions are pouring in.

The Venereal Disease Campaign

In several letters I have referred to the antivenereal campaign in Belgium, and particularly to the free public dispensaries in physicians' offices, for which service the government pays without demanding to see the patients. This protects patients against publicity. From the figures of the public health administration for the years 1919, 1920 and 1921, it appears that this plan has produced good results. In 1919, the year these dispensaries were established, 15,000 consultations for syphilis, 10,000 for gonorrhea, and 500 for chancroid were given. In 1920, the figures were 192,000, 100,000 and 4,000, respectively, and in 1921, 319,000, 130,000 and 2,500. These figures speak for themselves, but it can be safely said that the secrecy that characterizes the physicians' private offices is a prime factor in venereal prophylaxis and treatment.

Venereal Prophylaxis in the Army

In addition to the opening of a prophylactic station in every garrison of the Belgian army, various measures of a more general nature have been enforced in the army. During the whole period of army service, military physicians give lectures weekly on the dangers of venereal disease. They point out the hygienic measures that should be observed if any danger of

infection is suspected. Men who become infected are urged to report to a physician. No one is discharged from the army while suffering from an acute venereal affection. Men having gonorrhea are cared for until they recover completely. Soldiers having syphilis are not permitted to leave the service while there is any danger of transmitting the infection. When they are dismissed, they are advised to continue treatment until completely cured. They are given their confidential record card, which shows the nature of their infection and what treatment they have received. They are given information in regard to civil organizations (dispensaries, hospital consultation centers and clinics) where they may obtain free treatment. Even after they have been mustered out, syphilitics may, if they prefer, continue to receive free treatment in military clinics and hospitals, on presenting their card. For the remote effects of venereal disease, former patients may present themselves for treatment at any military consultation center in any garrison having hospital service.

Tuberculosis Sanatoriums

From the signing of the armistice, up to last year, the Belgian government maintained sanatoriums in France for tuberculous refugees who had been driven from their homes in Belgium. These institutions—one at Chanay, department of Ain; the other at Job, in Puy-de-Dôme—have been closed for reasons of economy, but the decrease in beds for the tuberculous has been made up by opening tuberculosis wards in Saint Idesbald Hospital at Houthem-les-Furnes. This sanatorium will accommodate a hundred patients, and will admit those having tuberculosis of the bones. The financial difficulties at present, and the expense that the construction of sanatoriums would entail, forced the government to find buildings that could be remodeled as sanatoriums.

Rabies in Animals

According to a report of the public health service, there were forty-eight cases of rabies in Belgium in 1921: forty-three cases in dogs, two in cats, two in cattle, and one in sheep. In conformity with regulations, veterinary inspectors in every case of canine rabies made an investigation to find whether the prophylaxis required by law had been taken. In most cases the head of the animal had been sent to the Pasteur Institute at Brabant. Of the forty-three suspected cases of canine rabies, eleven were substantiated by microscopic examination and one by experimental demonstration. Of the five other cases of animal rabies, two were confirmed by microscopic examination and one by experimental demonstration.

BERLIN

(From Our Regular Correspondent)

Feb. 23, 1924.

Conflict with the Health Insurance Societies

The time within which the health insurance societies of Berlin must furnish evidence that they are affording members adequate medical treatment expires, February 25. On that day, the health insurance societies must show that at least 1,200 physicians have indicated their willingness to serve the *Krankenkassen*. There does not seem to be the slightest prospect of any such number of physicians being secured, and it is likely that, soon after that date, the chief insurance bureau will intervene by virtue of Section 373 of the federal insurance decree. It looks, therefore, as if the conflict between the health insurance societies and the physicians would soon be settled.

A Medical Center for Athletes

Following the example of Hamburg, Dortmund and other large cities, the bureau of physical education in Leipzig plans to create a medical center for sport and athletics, which will deal with the hygiene of exercise. The medical examinations and professional advice will be in charge of a physician who has had ample experience in athletics. Special attention will be given to the examination of juveniles, and such exercises will be recommended as their physical condition requires. Later, medical examinations and measurements will be made before, during and after athletic contests. The *Turn- und Sportarzt*, as the physician will be called, will also instruct the public by lectures on physical training and the abuse of alcohol, and on other injurious substances.

The Mortality of Juveniles, 1913-1921

According to a publication by Oberregierungsrat Roesle of the federal public health bureau, a differentiation as to sex in the mortality of juveniles begins to manifest itself in the 15-20 age group. During the war, the difference in the mortality of the 10-15 age group and the 15-20 age group became very marked. The war losses began to affect even the 15-20 age group. For this reason, the natural course of mortality in juveniles during the war can be determined only from the mortality of females. This began to rise in 1915, and reached a rate of 8.9 per thousand living in 1918, which was almost three times the rate in 1913 and 1914. The influenza pandemic of 1918 affected this age group severely. After the war the fall in the mortality rate of females was almost as rapid as its rise had been; but the minimal mortality rate of 1913 and 1914 was not reached until 1921. Similar observations have been made with respect to males, for whom the mortality rate rose from 3.4 in 1913 to 24.2 in 1918. The rate for 1921 (4.0) was still considerably higher than the 1913 rate (3.4). The ages composing this age group suffered most from the food scarcity during the war, since the most important years of their development were in this period. The increase in tuberculosis mortality during the war naturally was very great in this group.

Mortality in Germany in the 15-20 Age Group, 1913-1921

Year	Deaths per Thousand Males	Females
1913	3.4	3.1
1914	7.0	3.1
1915	11.5	3.4
1916	11.4	3.7
1917	18.3	4.8
1918	24.2	8.9
1919	6.6	5.3
1920	5.3	4.1
1921	4.0	3.2

Marriages

FORREST JACKSON LANCASTER, Lexington, N. C., to Miss Catherine Gunning Nevergold of Jeannette, Pa., at Concord, N. C., January 24.

RALPH H. MERKEL, Pottstown, Pa.; to Miss Elizabeth Schilling of Columbus, Ohio, February 6.

GLOVER H. COPHER, St. Louis, to Miss Edith Marjorie Hulsizer of Flemington, N. J., January 12.

THOMAS J. KINSELLA, Minneapolis, to Miss Sara Monahan of Cedar Rapids, Iowa, January 28.

JAMES BLAIR DUNHAM to Miss Ida Burlingame, both of Wenona, Ill., February 22.

THOMAS LAWRENCE TOLAN, Milwaukee, to Miss Alice Keary of Chicago, March 4.

JOHN A. REUTER to Miss Lydia Bottemiller, both of The Dalles, Ore., recently.

PERCY JOSEPH FARMER to Miss Viola Scruggs, both of St. Louis, February 4.

EDGAR WALTER SPINZIG to Miss Bernice Beutel, both of St. Louis, recently.

Deaths

Hubert Emil Chauvin, Brentwood, N. Y.; Tulane University of Louisiana School of Medicine, New Orleans, 1910; member of the Medical Society of the State of New York; served in the M. C., U. S. Army, during the World War; aged 36; was instantly killed, March 6, when the automobile in which he was driving was struck by a train.

Eugene Wason, Milford, N. H.; Dartmouth Medical School, Hanover, 1873; member of the New Hampshire Medical Society; formerly lecturer and professor of obstetrics at the College of Physicians and Surgeons, Boston; Civil War veteran; at one time member of the board of health; aged 79; died, February 28, of senility.

Howard S. Bennett, Fort Bayard, N. M.; University of Gottingen, Germany, 1904; secretary of the Grant County Medical Society; served for three years at the U. S. Veterans' Bureau hospitals at Oteen, N. C., Alexandria, La., and Fort Bayard; aged 46; died, February 3, following an operation for strangulated hernia.

Edmund Lewis Graf ● Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1900; member of the Philadelphia Pediatric Society; for twenty years member of the board of health; on the staff of the Joseph Price Memorial Hospital, where he died, March 4, aged 46.

Germano Milite, Mount Vernon, N. Y.; University of Naples, Italy, 1898; member of the Medical Society of the State of New York; for ten years member of the board of health; aged 51; died, March 4, at the Post-Graduate Hospital, New York, following an operation.

James Everett Martin, Bluefield, W. Va.; University of Maryland School of Medicine, Baltimore, 1890; formerly president of the county and city board of health, and mayor and postmaster of Bluefield; aged 64; died, January 30, at Miami, Fla., of cerebral hemorrhage.

George Henry Brash ● Beatrice, Neb.; University of Michigan Medical School, Ann Arbor, 1892; served in the M. C., U. S. Army, during the World War; formerly secretary of the state board of health; aged 53; died, February 28, of tumor of the brain.

Charles Augustus Wells, Hyattsville, Md.; University of Maryland School of Medicine, Baltimore, 1862; past president of the Prince Georges County Medical Society; formerly state senator; aged 81; died, March 5, at Miami, Fla., of heart disease.

Joseph Eliot Edelen, Joplin, Mo.; University of Louisville (Ky.) Medical Department, 1870; formerly a druggist; at one time coroner of McDonald County; aged 75; died, January 12, of pneumonia and arteriosclerosis.

Joseph Augustin Langlois, Pittsfield, Mass.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1879; member of the Massachusetts Medical Society; aged 70; died, February 21, following a long illness.

George Herbert Burke ● Springfield, Mass.; McGill University Faculty of Medicine, Montreal, Que., 1906; served in the M. C., U. S. Army, during the World War; aged 39; died, February 27, of multiple neuritis.

William Mercer Lynch, New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1896; member of the Louisiana State Medical Society; aged 67; died recently of cerebral hemorrhage.

Robert B. Sellers ● Fort Worth, Texas; University of Pennsylvania School of Medicine, Philadelphia, 1895; formerly on the staff of the Southwestern Insane Asylum, San Antonio; aged 57; died, February 26.

Henry Marcellus Martin, Jr., Anniston, Ala.; University of Virginia Department of Medicine, Charlottesville, 1899; member of the Medical Association of the State of Alabama; aged 48; died recently of pneumonia.

Henry E. Matthey ● Davenport, Iowa; University of Wurzburg, Germany, 1887; member of the state board of health; on the staffs of the Mercy and St. Luke's hospitals; aged 71; died, March 1, of pernicious anemia.

Park W. McClung, Elizabeth, W. Va.; Starling Medical College, Columbus, Ohio, 1896; served in the M. C., U. S. Army, in France, during the World War; aged 53; died, February 17, of leukemia.

Henrietta Caroline Puthoff Miller, Hamilton, Ohio; Woman's Medical College of Cincinnati, 1895; member of the Ohio State Medical Association; aged 56; died, February 26, of cerebral hemorrhage.

John Thomas Oglesby, Jr., Santa Fe, N. M.; Medical College of the State of South Carolina, Charleston, 1922; aged 26; died, February 21, at a local hospital, following an operation for appendicitis.

Benjamin H. Palmer, Shelby, N. C.; Louisville (Ky.) Medical College, 1896; member of the Medical Society of the State of North Carolina; aged 52; died, February 10, of cerebral hemorrhage.

William Fewell Merchant, Manassas, Va.; University College of Medicine, Richmond, 1897; member of the Medical Society of Virginia; aged 55; died, February 20, following a long illness.

Andrew Clark Lowry, Ironton, Ohio; Medical Department University of Louisville, Ky., 1896; formerly member of the state legislature; aged 53; died, March 1, following a long illness.

Benjamin Irwin Johnson, Chanute, Kan.; Denver (Colo.) College of Medicine, 1899; aged 48; died, February 29, at the home of his brother in Dallas, Texas, of pernicious anemia.

Wellington H. Boyd, Portland, Ore.; Willamette University Medical Department, Salem, 1881; on the staff of St. Vincent's Hospital, where he died, February 28, of senility, aged 75.

Robert R. Le Master, Goliad, Texas; University of Louisville (Ky.) Medical Department, 1893; aged 59; died, February 17, at the Beeville (Texas) Hospital, following a long illness.

Benjamin B. Brannock, Grandview, Ind.; Cincinnati (Ohio) College of Medicine and Surgery, 1889; also a druggist; aged 67; died suddenly, March 2, of cerebral hemorrhage.

Mumford W. Ellis, Clarksville, Tenn.; Medical Department University of Louisville, Ky., 1881; member of the Tennessee State Medical Association; aged 66; died, January 28.

Joseph John Craven, Jersey City, N. J.; Medical Department of Columbia College, New York, 1888; for sixteen years city health officer; aged 63; died, February 24.

Morton Gallagher ● Bay City, Mich.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1887; aged 59; died, February 15, of chronic interstitial nephritis.

Michael Joseph Donahoe, Waterbury, Conn.; University of Pennsylvania School of Medicine, Philadelphia, 1886; aged 66; died suddenly, February 24, of heart disease.

George M. Norton, Savannah, Ga.; Southern Medical College, Atlanta, 1898; aged 50; died, February 22, of a self-inflicted wound while suffering from ill health.

Thomas G. Brewer, Osceola, Ark.; Louisville (Ky.) Medical College, 1874; aged 72; died, February 25, at a hospital in Memphis, Tenn., following a long illness.

James Henry Plecker, Chicago; Rush Medical College, Chicago, 1877; Civil War veteran; aged 82; died, March 11, of carcinoma of the ear.

Charles Theodore Cory, Harriman, Tenn.; Rush Medical College, Chicago, 1872; aged 76; died, January 9, at Chattanooga, of senility.

James E. Heider, Chicago; Chicago College of Medicine and Surgery, 1916; aged 46; died, March 6, of chronic interstitial nephritis.

Isaac Oliver Wilcox, Panama, Ill.; Barnes Medical College, St. Louis, 1907; aged 39; died, February 27, following a long illness.

John Beaton Coburn, Seattle; Hahnemann Medical College and Hospital, Chicago, 1894; aged 65; died suddenly, February 23.

Ernest E. Gengelbach, Huntingburg, Ind.; Eclectic Medical Institute, Cincinnati, 1881; aged 68; died, January 19, of paralysis.

Richard Montague Townsend, Keokuk, Iowa; Keokuk Medical College, 1895; aged 90; died, February 14, of senility.

Allen W. Meek, Hollansburg, Ohio (licensed, Ohio, 1896); Civil War veteran; aged 89; died, March 1, of senility.

Henry Walker Faulk, Canton, Ohio; Eclectic Medical Institute, Cincinnati, 1878; aged 72; died, February 23, of senility.

Correction.—It was erroneously reported in THE JOURNAL, March 8, p. 811, that Dr. Allen S. Watson, Glen Ellyn, Ill., was killed in an automobile accident. It was Dr. Watson's associate, Dr. E. S. Higley of Glen Ellyn, who was killed.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Montague's Petroleum Emulsion with Hypophosphites.—A quantity of "Montague's Petroleum Emulsion with Hypophosphites" was shipped in October, 1920, by the J. Kyle Montague Medicine Co., Inc., from Rocky Mount, Va., to West Virginia. The federal authorities declared that the stuff was misbranded under the Food and Drugs Act. The government chemists analyzed the preparation and reported that it consisted essentially of an emulsion of petroleum oil, alcohol, water, gum, sodium and calcium hypophosphites, and a trace of an iron compound. Some of the claims made for the preparation were:

"For Colds, Coughs, Bronchitis, Sore Lungs, Loss of Weight, Loss of Appetite, Loss of Strength, Tuberculosis Of The Lungs."

"In Tuberculosis of the Lungs (consumption) Montague's Emulsion is one of the best remedies."

"Many physicians recommend it in preference to Emulsion of Cod Liver Oil."

These and similar claims were declared false and fraudulent and in April, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed by the United States marshal.—[*Notice of Judgment No. 11515; issued Oct. 25, 1923.*]

Blacko Kidney Tablets.—The Blacko Medicine Co., Charleston, W. Va., shipped in June, 1919, a quantity of "Blacko Kidney Tablets" that were declared misbranded under the federal Food and Drugs Act. The Bureau of Chemistry reported that analysis showed these tablets to be composed essentially of hexamethylenamin, methylene blue, boric acid, potassium nitrate, potassium bicarbonate, and plant extractive material with wintergreen flavoring. The product was falsely and fraudulently represented to be an effective treatment, preventive, remedy and cure for kidney and bladder troubles, weak kidneys, urinary troubles, inflammation of the bladder, gallstones, irregular heart action and enlargement of the prostate. In May, 1923, the Blacko Medicine Co. entered a plea of *nolo contendere* and was fined $10.—[*Notice of Judgment No. 11540; issued Oct. 25, 1923.*]

Dr. Roger's Improved Rog-R-Pils.—The Digestive Chemical Co., St. Paul, Minn., shipped in March, 1922, a quantity of "Dr. Roger's Improved Rog-R-Pils" which were misbranded. When analyzed by the federal chemists it was reported that these pills consisted essentially of iron carbonate, tansy oil, ergot extract and aloin. Some of the fraudulent claims made for the product were:

"A Very Efficient Remedy For Menstrual Disorders Only, Caused By Colds, Nervous Shocks and Anemia."

"Very Necessary Remedy For Every Woman."

"Will relieve many cases of Suppression of the Menses, caused by Colds, Nervous Shocks, Anemia, General Debility, etc."

These and similar claims characteristic of the advertising used in puffing fraudulent remedies for the alleged production of abortion were declared false and fraudulent. In June, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11541; issued Oct. 25, 1923.*]

Fernet De Vecchi.—A quantity of "Fernet De Vecchi" consigned by the Banfi Co., Inc., of New York City, and shipped to Pennsylvania was declared misbranded. Analysis of a sample of the article by the Bureau of Chemistry showed that the product contained, essentially, about 40 per cent. alcohol, 2.8 per cent. of extractives from plant drugs, including aloes, and a small quantity of alkaloid. The claims in the trade package falsely and fraudulently represented that the preparation was a "cure" for indigestion, fever, irritable nerves, lack of appetite, worms, "biliousness" and giddiness. In May, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11609; issued Nov. 28, 1923.*]

Dr. Link's Golden Tonic.—The Dr. Link Medicine Co. of Dallas, Texas, shipped in May, 1922, a quantity of "Dr. Link's Golden Tonic" to Wichita, Kansas. The federal chemists reported that analysis showed the preparation to consist approximately of the following composition:

Epsom salt	39	per cent.
Nitric acid	1	per cent.
Potassium citrate	1.5	per cent.
Iron sulphate	4	per cent.
Water	54	per cent.

Some of the claims made for this mixture on which the federal authorities based their charge of misbranding were:

"Anti-Malaria For Chills, Periodic Fever, Any Form of Malaria, Yellow Eyes, Sallow Complexion, Dyspepsia, Indigestion, Eczema, Eruptions upon the Skin, Kidney Trouble, Dropsy, Female Troubles, Irregularities. . . . Headache, Boils, Old Sores, Blood Taint, Rheumatism, Biliousness, Syphilis."

"Has cured influenza and La Grippe and will prevent these and other diseases."

These and similar claims were declared false and fraudulent and in March, 1923, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11650; issued Nov. 28, 1923.*]

Dawson Springs H. and H. Water.—The H. & H. Water Co., of Dawson Springs, Ky., shipped in June and July, 1922, a quantity of "Dawson Springs Natural Water" and "Dawson Springs Concentrated Water." The product was declared misbranded by the federal authorities. Government chemists reported that the "Natural Water" contained 4 grams to the liter and the "Concentrated Water" 226 grams to the liter of dissolved mineral matter, most of which was Epsom salt. Misbranding was alleged because of the curative and therapeutic effects claimed on the label. The "Natural Water" was said to be for "Indigestion, Stomach, Liver and Kidney Troubles, Malaria, and Female Troubles," while the "Concentrated Water" added to the list of diseases, "Bright's disease, Diabetes and Jaundice." The claims made were declared false and fraudulent and in October, 1922, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment No. 11744; issued December, 1923.*]

Oxidaze Tablets.—The American Oxidaze Co., Worcester, Mass., shipped in September, 1915, a quantity of "Oxidaze Tablets" which were misbranded. The Oxidaze quackery was dealt with at some length in THE JOURNAL of the American Medical Association, Dec. 30, 1911, and prior to that, Feb. 15, 1908. The federal chemists reported that samples of the misbranded specimens were analyzed and found to consist essentially of sugar with potassium iodid and flavored with cinnamon, sassafras, camphor, menthol and wintergreen. The government's charge against this nostrum was that the representations that it was effective as a "cure" for tuberculosis and also effective as a "cure and preventive" of pneumonia and as a remedy for hay fever, were false and fraudulent. For some reason not explained in the records, this violation of the law made in September, 1915, did not come up for final disposition until November, 1922, at which time the court ordered that the case be placed on file.—[*Notice of Judgment No. 11760; issued February, 1924.*]

The "Honorary Subscribers" to the "Siglo Médico."—Our Madrid exchange announces this year the names of three subscribers who have been transferred to the list of "honorary subscribers" in celebration of their golden wedding with the *Siglo Médico*. They have been continuous subscribers for fifty years.

Correspondence

OPINIONS ON NOMENCLATURE

To the Editor:—Among the opinions (Nos. 78 to 81) recently (Feb. 9, 1924) issued by the International Commission on Zoological Nomenclature (Smithsonian Miscellaneous Collections **73**, No. 2), the following involve questions of nomenclature of practical application in medical work:

No. 78. On basis of the premises presented, the commission is of the opinion that *Dermacentor venustus* dates from Marx in Neumann, 1897, type specimen Collection Marx No. 122 (U. S. National Museum), from *Ovis aries*, Texas, and that *Dermacentor andersoni* dates from Stiles, 1908, holotype U. S. P. H. & M. H. S. 9467, from Woodman, Montana.

Opinion written by Stejneger. Vote: Concurring 11; dissenting, 2; not voting, 2.

The practical effect of this opinion is that the correct name for the common Rocky Mountain spotted fever tick is definitely established to be *Dermacentor andersoni* instead of *Dermacentor venustus*.

No. 81. On basis of the premises before the commission, the common bedbug of Europe, *Cimex lectularius*, is the genotype for *Cimex* 1758, *Acanthia* 1775, *Clinocoris* 1829, and *Klinophilus* 1899 *(Clinophilus* 1903), and its proper technical designation under the rules is *Cimex lectularius. Cimex* Linn., 1758, type *C. lectularius* is hereby placed in the official list of generic names.

Opinion written by Stiles. Vote: Concurring, 10; concurring in part, 2; dissenting, 1; not voting, 5.

Opinion 81 finally settles a controversy that has continued for more than a hundred years and a confusion that has cost scientific and medical men the loss of months of time in study. The final opinion summarizes the pertinent literature from 1758 to date and solves one of the most complex and most difficult cases that have ever been submitted to the International Commission. Agree or not as one will with the very technical argument in the opinion, it is in the interest of harmony that physicians and zoologists discontinue further controversy on this point and that all unite in using the name decided on by the commission.

C. W. STILES, M.D., Washington, D. C.
Secretary, International Commission.

"HERMAN RUBIN AND CITROPHAN"

To the Editor:—Some time ago my attention was called to the fact that a circular letter describing the "Citrophan" treatment was signed by Dr. H. H. Rubin, who described himself as "Physician to Mount Sinai Hospital." Dr. Rubin was not a physician to Mount Sinai Hospital but had merely been a subordinate clinical assistant in one of the branches of the outpatient service for a short period. As long ago as November, 1923, I remonstrated with him vigorously regarding the misleading character of his circular, and obtained his promise that the name of Mount Sinai Hospital would not thereafter be used in connection with Citrophan.

S. S. GOLDWATER, M.D., New York.
Director, Mount Sinai Hospital.

NEW TEST FOR BILE PIGMENTS

To the Editor:—Dr. Kapsinow, in his article on a new test for bile pigments in urine, bile and blood serum (THE JOURNAL, March 1, p. 687) reports that the Obermayer indican test is also a bile test, being more immediate and more delicate than the Gmelin and Rosenbach reactions. In searching for a new bile test, I finally succeeded in finding that if 5 c.c. of concentrated hydrochloric acid is added to an equal amount of urine in a test tube, and the test tube is slowly inverted several times, a drop of hydrogen peroxid then being allowed to flow down the side of the tube, in the presence of bile a deep green ring appears between the peroxid and the mixture below. The area above the ring assumes a dirty green discoloration. As the tube is allowed to stand, the dirty green discoloration gradually descends, so that in twenty-four hours it permeates the entire specimen. The discoloration is immediate and is positive in all specimens that are known to contain bile. I have observed in specimens in which bile has been decreasing that this test has remained positive when other bile tests have failed to respond. This test has always been positive when any other bile test was positive. Its delicacy can therefore be seen.

This, however, has been described also as an indican test. When bile and indican are present, a joined purplish and greenish ring is seen. This suggested to my mind the possibility, with further research, of a single test that would give a characteristic play of colors for any or all oxidizable and chromatic substances found in specimens of urine. My observations with chromatic substances other than bile and indican in the urine have been less favorable. Feces also have given results not so satisfactory.

WILLIAM L. GOULD, M.D., Albany, N. Y.

METHOD FOR APPLYING PARAFFIN TO EXTENSIVE BURNS

To the Editor:—A simple, yet effective, time and labor saving means of applying paraffin to extensive burns is afforded by attaching the usual hot water jacketed sprayer to a gas oxygen machine or a compressed air tap. A square foot of surface can be adequately covered in two or three minutes. This method far surpasses the use of a camel's hair brush in the evenness as well as the speed of application.

WILLIAM P. VAN WAGENEN, M.D., Boston.

DETECTION OF EXTRASYSTOLE OF HEART IN RELATION TO DISEASES OF BILE PASSAGES AND DUODENAL ULCER

To the Editor:—The important contribution of Drs. Straus and Hamburger in THE JOURNAL, March 1, is timely and of considerable practical value. In July, 1923, I read a paper entitled "Some Problems in Gallbladder Disease, Their Operative Treatment and Complications," before the Lake Keuka Medical and Surgical Association, Lake Keuka, N. Y. In this paper it was stated that a diseased gallbladder may act as a source of focal infection, acting on the heart, producing what is known as an extrasystole. After the operation of cholecystectomy, the extrasystole entirely disappeared. In one of the cases there was a coexistent duodenal ulcer. The cardiographic work was performed by Dr. Joseph Wolffe. The paper, which has been in the hands of the publishers for the last six months, will appear shortly.

MOSES BEHREND, M.D., Philadelphia.

DENGUE

To the Editor:—Supplementary to the interesting communication of Dr. John W. Shuman, concerning dengue (THE JOURNAL, March 1, p. 737), inspired by the editorial on dengue (THE JOURNAL, January 26, p. 306), may be mentioned the following, quoted from "Medical and Veterinary Entomology" by William B. Herms (New York, the Macmillan Company, Ed. 2, 1924, page 4): "Dengue or breakbone fever, a widely distributed disease of the tropics and subtropics, was found to be a mosquito borne disease by Graham while working in Syria in 1902. Graham, and later Ashburn and Craig, showed that several species of mosquitoes, such as *Culex quinquefasciatus*, say, and *Aedes argenteus* Poirret, are able to transmit the disease." A footnote relating to Graham details: Graham, Harris, 1902, Dengue: A Study of Its Mode of Propagation and Pathology, *M. Rec.* **61**:204-207.

H. P. ASHE, M.D., Pittsburgh.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CLASSIFICATIONS OF HUMAN AGGLUTINATING SERUMS

To the Editor:—What is the present position with regard to the Moss and Jansky classifications of human agglutinating serums? I am under the impression that a conference representing the American surgical and pathologic societies decided about a year ago that the Moss classification was to be given up in America and the Jansky adopted. I have looked through THE JOURNAL for the last year or two, but I cannot find the reference. On referring to such recent American textbooks as Stitt and Kolmer, I find that there is apparently no unanimity as to which classification is to be used. The difference between Groups 1 and 4 in the two classifications might easily give rise to serious trouble.

R. A. B.

ANSWER.—Both the Jansky and the Moss classifications appear in textbooks and manuals. Some authors discuss both classifications, prominence being given to the classification that presumably the author himself uses in practice. Certain books give only one classification, without mentioning the other.

In grouping persons for blood transfusion, both classifications are used, the classification of Moss being the more common, especially in France, England and the United States.

The use of different classifications in manuals and textbooks has caused confusion and misunderstanding in teaching.

It is also possible for serious accidents to arise in connection with transfusion of blood through confusion of the two classifications. This is especially true in case prospective donors are grouped by different examiners or at different hospitals. During the war, many individuals were tested and informed that they belonged to a certain group. Should such an individual be transfused or used as a donor without further tests and the other recipient or donor, as the case might be, be grouped according to a different classification, serious results might arise.

As further confusion and the possibility of accident may be avoided by the universal use of one classification, it is recommended, on the basis of priority, that the Jansky classification be adopted.

STERILIZATION OF ENVELOPS

To the Editor:—At the hospital, we are using small pay envelops with powder in them after they are sterilized, to powder the hands of the surgeons when they put on rubber gloves, preliminary to operating. The question has been raised whether the glue in the envelops can be rendered sterile, and it has been suggested that there is danger that an anthrax infection or some other spore infection might be picked up. Are any cases on record of such a condition, and is it possible?

CECIL STRIKER, M.D., Cincinnati.

ANSWER.—We have seen no case reports of infection originating from the gum on envelops.

As to the possibility of such an infection, an investigation of a large envelop factory that makes its own gum disclosed that the paper used in the pay envelops is made from a wood pulp, and that neither glue nor animal products are used for the seal on pay envelops or ordinary envelops.

A gum is used for the seams which is made from tapioca dextrin, as it is called commercially. To this flourlike substance is added a proportion of 3 gallons of alcohol to 15 gallons of water, granulated sugar, glucose, "chemically pure" glycerin and 2 quarts of phosphoric acid (U. S. P.). This mixture is heated gradually to a temperature of from 185 to 190 F. The gum for the licking seal is made from about equal parts of tapioca dextrin and water. The envelops are cut and the gum is applied by machinery. This commercial tapioca is a coarse, flourlike substance obtained from roots grown in Java. On reference to the literature, it is found that tapioca is obtained from cassava shrub, which grows about 8 feet high. Tapioca is stated to be prepared in the West Indies, tropical America and in Africa. The roots are first washed and stripped of their rind and prepared into a coarse flour. Dextrin may be formed from this starchy material.

It would seem that one should find no more contamination by anthrax or other pathogenic spores than in other materials used at operations. Spores of anthrax and tetanus are highly resistant to heat and germicides, as compared to the vegetative forms. However, spores of other aerobic and anaerobic bacteria, among which are *Bacillus subtilis* and some other saprophytes, are more resistant to heat than anthrax or tetanus (Jordan, E. O.: General Bacteriology, Philadelphia, W. B. Saunders Company, 1922). Since the materials used at operations are sterilized by adopted and standardized methods, it should be just as satisfactory for the sterilization of pay envelops.

EPSTEIN METHOD FOR BLOOD SUGAR

To the Editor:—I have been unable to find the Epstein method for blood sugar, and I fear am too dense to understand Kramer's method, given in THE JOURNAL, Oct. 26, 1923, p. 1171. I think I have all the needful implements. Can you help me? If you know a better, simple, color method for sugar from finger blood, let me have that.

D. H. DUFFIE, M.D., Central Lake, Mich.

ANSWER.—The technic described by Epstein requires 0.2 c.c. of blood, obtained from the finger or the ear. This is put into sodium fluorid solution and laked by adding water up to the 1 c.c. mark on the tube. The proteins are then precipitated with picric acid, which is added to a total volume of 2.5 c.c. After filtration, 1 c.c. of the filtrate is carefully heated over the naked flame. The contents of the tube are boiled until all but 2 or 3 drops of the solution is evaporated. Five-tenths cubic centimeter of 10 per cent. sodium carbonate solution is then added, and the tube heated again until the contents are concentrated to a small volume equal to about 2 or 3 drops. The color changes from yellow to deep red or reddish brown, and the reaction is complete. With careful rinsing, the contents of the tube are then transferred to the graduated tube of the hemoglobinometer and compared with the standard solutions.

The Epstein method has been modified by C. M. Wilhelmj of St. Louis, who asserts (*J. Lab. & Clin. Med.* **7**:489 [May] 1922) that his modification brings the accuracy of the Epstein method up to that of the Lewis and Benedict procedure.

PREPARATION OF ALLERGENS

To the Editor:—How does one produce a satisfactory suspension of horsehair and horse dander allergen for subcutaneous injection in the desensitizing treatment of a patient suffering from symptoms arising from hypersensitiveness to these allergens?

KER C. PEACOCK, M.D., Sioux City, Iowa.

ANSWER.—A weighed quantity (10 gm.) of the finely divided hair or dander is extracted with 0.2 per cent. sodium hydroxid solution, and hydrochloric acid is added to the filtered solution until the iso-electric point of the dissolved protein is reached. The precipitate is collected on a filter, washed with acetone, and dried. To the dry precipitate are added 88 c.c. of hundredth-normal sodium hydroxid, and the mixture is shaken thoroughly at frequent intervals for twenty-four hours. Sufficient absolute alcohol (12 c.c.) is then added to make the alcoholic content about 12 per cent. The mixture is thoroughly shaken at intervals for twenty-four hours, after which it is centrifugalized at high speed and the supernatant fluid is drawn off with a pipet. This liquid, therefore, consists of the epidermal protein dissolved in very dilute sodium hydroxid containing 12 per cent. of alcohol, and it represents, by weight, 10 parts of epidermis in 100 parts of solvent. This 1:10 solution is used as stock, and from it other dilutions, such as 1:100, 1:500, 1:1,000, 1:5,000 and 1:10,000, are made by suitable dilutions with physiologic solution of sodium chlorid. Five-tenths per cent. of cresol is added as a preservative.

IMMUNITY OF INFANTS TO DIPHTHERIA

To the Editor:—1. What percentage of infants are immune to diphtheria, and up to what age? 2. Is immunity derived from a mother who has never had diphtheria, and what percentage? 3. In a family in which children have diphtheria, should a baby of 6 months be immunized, especially when it cannot be isolated? Please omit name.

M. W., S. D.

ANSWER.—1. Based on Schick tests made in New York, William H. Park (THE JOURNAL, Nov. 4, 1922, p. 1584) gives the proportion of infants under 3 months of age who are immune to diphtheria as 85 per cent., from 3 to 6 months as 70 per cent., and from 6 months to 1 year, 40 per cent.

2. The immunity in the infant is usually, if not always, due to antitoxin which passes from an immune mother to the child through the placental circulation. The mother may be immune, although never having recognized diphtheria. Mild, unrecognized attacks of diphtheria probably often are the origin of immunity developing after birth.

3. It would be proper to immunize a baby of 6 months if unavoidably exposed to infection by diphtheria, especially as the disease produces a large proportion of deaths at that age.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 1. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

COLORADO: Denver, April 1. Sec., Dr. D. A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 8. Sec., Dr. Edgar P. Copeland, Washington.

HAWAII: Honolulu, April 14. Sec., Dr. Guy C. Milnor, 401 Beretania Street, Honolulu.

IDAHO: Boise, April 1. Director, Mr. Charles Laurenson, Boise.

ILLINOIS: Chicago, April 15-17. Supt. of Registration, Mr. V. C. Michels, Springfield.

MINNESOTA: Minneapolis, April 1-3. Sec., Dr. Thomas McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 1. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

NEVADA: Carson City, May 5. Sec., Dr. S. L. Lee, Carson City.

NEW MEXICO: Sante Fe, April 14-15. Sec., Dr. W. T. Joyner, Roswell.

OKLAHOMA: Oklahoma City, April 8-9. Sec., Dr. J. M. Byrum, Shawnee.

RHODE ISLAND: Providence, April 3-4. Sec., Dr. B. U. Richards, State House, Providence.

UTAH: Salt Lake City, April 1. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

THE INQUIRY INTO THE DEMAND AND SUPPLY OF INTERNS*

HOMER F. SANGER
CHICAGO

The American Conference on Hospital Service and the Intern Committee of the American Hospital Association, both of whom are studying some or all of the intern problems, have asked the Council on Medical Education and Hospitals to furnish them with information about the shortage of interns and the relative value of certain measures proposed or already operating to relieve the shortage. The conference especially has had for consideration the possible training of nonmedical clinical assistants as substitutes for interns. A questionnaire was prepared jointly by the three organizations, to cover the information that each wants and to supplement the data already compiled.[1] The Council sent this questionnaire with a letter to 4,811 superintendents of hospitals of twenty-five beds or more in the United States, its possessions and Canada. Somewhat more than 4,400 were sent to the hospitals of twenty-five beds and over located in the states, and from these we received 2,453 returns up to February 20, of which 2,397 were complete enough to be included in the tabulation. These 2,397 letters and questionnaires from the same number of hospital superintendents make extremely good reading. It is the aim of this report to reflect the leading facts and opinions that so many busy people have been good enough to give to us.

TABLE 1.—*Replies to Questionnaire*

Reports tabulated	2,397	
Hospitals that require interns	872	
Number of interns required	4,509	
Interns now in hospitals	3,669	
Shortage	840	

In answer to the first question, "How many interns do you require?" there is a total number of 4,509. The next question, "How many do you have now?" was answered by 872 hospitals, which have a total of 3,669 interns. There is, therefore, according to these returns, an apparent shortage for the whole United States of 840 interns. But it is known through the Council's more complete data on all hospitals that at least 940 hospitals in the country have had or desired interns within the last two years, requiring 4,656 interns. It is safe to assume that the number of all the places where interns are wanted that are unfilled does not far exceed 1,000, and the number of acceptable internships remaining unfilled would be much less than 1,000.

The remaining questions all had to do with several methods proposed or already operating to counterbalance the scarcity of interns.

INCREASE IN LENGTH OF INTERNSHIP AS A RELIEF MEASURE

On the question of length of internship, eighty-four hospitals, using 176 interns, said that their internships were shorter than twelve months; 590 hospitals, using 2,159 interns, have a twelve-month internship; 108 hospitals, having 1,115 interns, have a twelve to twenty-four month internship, and ninety hospitals afford 219 internships, the length of which they do not state.

TABLE 2.—*Length of Internship*

	Hospitals	Internships
Under twelve months	84	176
Twelve months	590	2,159
From twelve to twenty-four months	108	1,115
Over twenty-four months	2	35
Indefinite	88	184

To the question whether the hospital offers an extension of the internship, 424 hospitals reported that they do offer an extension. The length of the additional term is less than twelve months in eighty hospitals. It is twelve months in 178; from twelve to twenty-four months in twenty-three, and over twenty-four months or indefinite in 143 hospitals. Pressing this inquiry about the extension of internship still further, the question was asked, "If you do not offer an extension, could you do so?" to which 134 replied that they could offer such an extension. The salary for this additional term, 127 hospitals said, is $25 or less a month; ninety-seven hospitals, from $26 to $50 a month; 112 hospitals, from $51 to $100 a month. From the size of these salaries we may conclude that the real compensation is to come by way of educational opportunity. However, in seventy-four instances, the salary for the extension is more than for the regular internship, while in twenty-nine it is the same. The significant facts are that 424 hospitals offer an extension of internship, and 134 hospitals who do not offer an extension could do so, which makes a possible 558 hospitals that do offer or are willing to offer an extension of internship.

TABLE 3.—*Extension of Internships*

Hospitals offering extensions:		
Under twelve months	80	
Twelve months	178	
From twelve to twenty-four months	23	
Indefinite term	143	
Hospitals that offer extensions		424
Others that could offer extensions		134
Total		558
Salary for extensions:		
$25 a month or less	127	hospitals
From $26 to $50	97	hospitals
From $51 to $100	112	hospitals
Over $100	54	hospitals
No salary or none stated	168	hospitals
Total	558	hospitals

Theoretically, every intern that the hospital induces to serve for an additional year means one less intern to be procured by that hospital, or one more for the hospital field at large. The extension of internship can without doubt be managed so as to help relieve the shortage of interns, espe-

* Read before the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, Chicago, March 5, 1924.

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cially in hospitals where the extension of the internship is arranged with this particular object in view.

INTERNSHIPS IN SPECIALTIES FOR THOSE THAT HAVE ALREADY SERVED A GENERAL INTERNSHIP

The use of interns who have already served a general internship, to do work in connection with the practice of specialties, has been suggested as one means of making the limited supply of interns reach farther. The inquiry brings out the fact that there are already 641 of these special internships, 376 of them being in the special departments of 167 general hospitals, and 265 in 118 special hospitals. Only some of the superintendents told us in what specialties these internships are offered. These partial reports mention in eye, ear, nose and throat, 25 internships; eye, 8; ear, nose and throat, 18; gynecology, 25; internal medicine, 40; laboratory,

TABLE 4.—*Special Internships for Those Who Have Served General Internships*

118 special hospitals offer		265 special internships	
167 general hospitals offer		376 special internships	
285 hospitals offer		641 special internships	
In what specialties:			
	Internships		Internships
Surgery	87	Gynecology	25
Neuropsychiatry	61	Orthopedics	19
Obstetrics	58	Ear, nose and throat	18
Tuberculosis	41	Genito-urinary	15
Medicine	40	Roentgen-ray	13
Pediatrics	34	Pathology	10
Laboratory	27	Skin and cancer	10
Eye, ear, nose and throat	25	Contagious disease	8

27; maternity, 58; nervous and mental diseases, 61; orthopedics, 19; pediatrics, 34; genito-urinary, 15; general surgery, 87; tuberculosis, 41; roentgen ray, 13; contagious diseases, 8; pathology, 10; skin, cancer, venereal and others, 20; total, 509. It is hoped that from some if not all of these may eventually develop well organized courses of instruction in these specialties whereby they may become recognized as graduate medical schools.

These special internships requiring a previous general internship are very significant, not only in relation to the supply of interns, but also in the training of general practitioners who have had several years' experience and who want to review or prepare themselves for practice in the specialties.

THE EFFECT OF EMPLOYING MEDICAL STUDENTS AS INTERNS

Four hundred and fifty hospitals report that they use a total of 748 medical students. Three hundred and eighty-five

TABLE 5.—*Medical Students as Substitutes for Interns*

Hospitals using students:	Hospitals
In fourth year	268
In third year	57
Year not stated	125
Total	450
How long students serve:	Hospitals
Less than one year	207
One year	123
Over one year	15
Use fewer interns because they have students:	
"Yes"	163 hospitals
"No"	122 hospitals

hospitals have the medical students residing in the building. Fifty-seven hospitals use students in the junior year, 268 in the senior year, sixty in the junior and senior, and fifteen do not say what year. As to how long these students serve, 207 hospitals use students for less than a year, 123 for one year, and fifteen for two years or longer.

What duties are performed by the students in the hospital? In 139 hospitals they take or write histories. They do laboratory work in 147 hospitals; roentgen ray in 14; general intern work in 114; assist interns in 103; do surgical dressings in 42; physical examinations in 61; emergency work in 22; ambulance service in 23; ward service in 33; clerical work in 16; dispensary in 15.

In answer to the question whether the hospital gets on with fewer interns because of the use of medical students, 163 hospitals answered "Yes"; 122, "No." It is evident, therefore, that the use of medical students is an important source of relief from the shortage of interns.

THE EMPLOYMENT OF RESIDENT PHYSICIANS

Among the 2,397 replies that have been tabulated, 889 said that they employ resident physicians, the total number of residentships in these hospitals being 2,519. It is known from the Council's data on all hospitals that there are 1,544 that use resident physicians, and that the total number of residentships in the United States is at least 3,912, including some instances in which owners are residents.

It was found that in 619 hospitals the resident physicians served an indefinite period. In 140, the service was by the year; in forty-six, it was from twelve to twenty-four months, and in sixty hospitals the residents served for more than two years, but not indefinitely. The salaries of residents in seventy-eight hospitals are less than $1,200 a year; in 196, from $1,200 to $1,800; 250 superintendents said that they pay more than $1,800 a year.

How many hospitals have ceased to use interns and begun using resident physicians instead is not known, but the number is considerable. The fact that 1,544 hospitals have resident physicians, as compared with a possible 900 that use interns, gives some indication of the relation of the use of resident physicians to the supply of interns. Resident physicians seem to be readily procurable at a salary of from $1,000 to $2,500 and over per year, and maintenance.

USE OF NONMEDICAL CLINICAL ASSISTANTS

Now come the special questions proposed by the representatives of the conference. The first of these special questions

TABLE 6.—*Nonmedical Clinical Assistants*

Reports show 814 hospitals use 2,061 nonmedical clinical and laboratory assistants or technicians.	
Could and would employ nonmedical assistants:	
"Yes"	389
"No"	587
Such assistants could supplement and aid interns:	
"Yes"	490
"No"	340
Could take the place of interns:	
"Yes"	286
"No"	591
Number required in addition to those now employed	273
Salary:	Hospitals
$25 a month or less	8
From $25 to $50	26
From $51 to $100	114
Over $100	53
Duties:	Hospitals
Laboratory work	241
Roentgen-ray	123
Writing histories	119
Clerical work	46
Regular intern's work	34
Giving anesthesia	18
Dressing surgical cases	15
Assisting interns	12
Hydrotherapy and physiotherapy	8
Pharmacy	7
Physical examination	7

is, "Do you use in your hospital nonmedical clinical and laboratory assistants or technicians, and how many?" A total of 814 hospitals answered that they do use such clinical and laboratory assistants or technicians, the total of these assistants or technicians being 2,061.

The next question is, "Could and would your hospital employ nonmedical clinical assistants who are properly trained to write histories and do other bedside work exclusive of physical examination, and also perform the simpler clinical laboratory tests?" Answers in the affirmative numbered 389, while 587 hospitals answered that they would not employ such assistants. The answers to these questions were in many cases qualified by some statement such as, "Would use them if necessary"; "Suppose they would do if we had to use them"; "If we could not get interns"; "Yes, but we do not need them"; "As a last resort"; "If forced to"; "Would prefer not to"; "It is doubtful."

The question was then asked, "Is it your opinion that these nonmedical clinical assistants could supplement and aid the interns of your hospital?" to which 490 hospitals replied in the affirmative, 340 in the negative. This question was voted on by 479 physicians, 122 registered nurses and 229 laymen. Each group favored the opinion in about the same proportion as the other group, 57 per cent. of the physicians, 62 per cent. of the nurses and 65 per cent. of the laymen being favorable. Following this was the question, "Is it your opinion that properly trained nonmedical clinical assistants can serve in place of interns when the latter are not obtainable?" It was the opinion of 286 hospitals that these assistants could serve in place of interns, and of 591 that they could not. Here, again, the mind of each professional group is divided in like proportions, the negative votes running to 68 per cent. among the physicians, 60 per cent. among the nurses and 69 per cent. among the laymen. The hospitals were asked to indicate how many nonmedical clinical assistants they would require in addition to what they may have now. The total number indicated in the answers is 273. In reply to the question, "What salary could your hospital afford to pay?" eight hospitals stated that they would pay less than $25; twenty-six would pay from $26 to $50; 114, from $51 to $100, and fifty-three would be willing to pay something over $100. To the question, "What would be their duties?" 119 replied that they would employ them in writing histories; 123 in the roentgen-ray department; 241 would use them as laboratory technicians; 46 on clerical work; 34 in regular intern work; 15 in doing surgical dressings; 18 as anesthetists, while 7 hospitals would use them in making physical examinations.

THE DISTRIBUTION OF INTERNS

Like the shortage of coal, or food, or labor, or capital, or any other commodity, the shortage of interns is in part a matter of distribution. This fact is made clear by a number of hospitals who advertised for interns during the months of July, August and September. Twenty-three hospitals, each of which had at least one ad in THE JOURNAL, got 478 replies, or an average of more than twenty for each internship. The approved hospitals averaged twenty-seven replies, and the nonapproved hospitals fifteen replies. A great many of the places now calling for interns would doubtless soon be filled if they were brought to the attention of candidates through some effective clearing house arrangement.

Another interesting observation regarding the distribution of interns is the fact that the hospitals of 100 beds and over secure interns more readily than smaller hospitals, the shortage being 17.2 per cent. in hospitals of 100 beds or over, and 28 per cent. in the smaller hospitals. Hospitals of more than 100 beds require a total of more than ten times as many interns as are required by all the smaller ones. The larger institutions now have more than twelve times as many interns as those of less than 100 beds.

INCREASE IN THE NUMBER OF GRADUATES

Judging from the present enrolment in the medical colleges, there will be approximately 3,200 graduates in 1924, 3,700 in 1925, 4,500 in 1926, and by 1927 it is expected that there will be not far from 5,000 graduates. About 90 per cent. of all graduates take internships. Counting the graduates who are expected to apply for internships, and adding the thousand or more former graduates who are all the time serving as interns, the available supply of interns for the years in the near future should be: for 1924, 4,000; for 1925, 4,500; for 1926, 5,000; for 1927, 5,500. It is evident that the supply of interns will overtake the demand in a few years, unless there is considerable increase in the demand for interns.

SUMMARY

There is a stated shortage of 840 interns, which, in the light of other data, might warrant an estimate of a total shortage of around 1,000. Hospitals approved for internships by the Council on Medical Education and Hospitals have 89.1 per cent. of the number of interns they want, and nonapproved hospitals have only 63.2 per cent. of their desired number.

Regarding the different ways of meeting the shortage, (1) 424 hospitals offer extensions of their internships, and 134 others say they could offer extensions; (2) 285 hospitals can make use of 641 interns, in specialties, who have had general internships; (3) 450 hospitals are using 748 medical students, and 163 of these hospitals use fewer interns because of the students; (4) resident physicians are used by 1,544 hospitals, which have 3,912 residents, including some resident owners; (5) 814 hospitals use 2,061 clinical and laboratory assistants and technicians. The majority believe that properly trained nonmedical assistants could aid interns but could not take the place of interns. A total of 273 nonmedical clinical assistants would be required in addition to what the hospitals have now. (6) There are some hospitals that want interns and some available candidates for the positions who fail to get connected. (7) The number of medical graduates available for internship may be expected to increase at the rate of approximately 500 a year for the next four years.

Massachusetts November Examination

Dr. Charles E. Prior, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Nov. 13-15, 1923. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 49 candidates who took the physician's and surgeon's examination, 31, including 2 osteopaths, passed, and 18, including 4 osteopaths, failed. Two candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Yale University		(1922)	81.3
Northwestern University Medical School		(1901)	75
Bowdoin Medical School		(1915)	85.1
Boston University	(1922) 84.4, (1923, 4) 75, 80.9, 81.8,		82.8
Harvard University	(1921) 79.5, (1923, 5) 77.7, 80.6, 86, 86.2,		88.5
Middlesex College		(1923)	79.7
Tufts College Medical School		(1922, 2)	81.1, 83.3
University of Michigan Medical School		(1921)	84.9
St. Louis University School of Medicine	(1918) 82.2,	(1923)	83.3
Albany Medical College		(1905)	90
Cornell University		(1921)	89.9
Long Island College Hospital		(1922)	77.7
University of Virginia		(1922)	77.2
University of Naples, Italy	(1906)* 75,	(1919)*	75
University of Geneva, Switzerland		(1919)*	75.4
Central Turkey College, Syria		(1886)†	75
Syrian Protestant College, Beirut, Syria		(1914)*	75
Osteopaths			75, 75.2

College	FAILED	Year Grad.	Per Cent.
College of Physicians and Surgeons, Boston	(1923, 3) 68.1, 69.1, 71.5	(1918)	68.4,
Middlesex College of Medicine and Surgery	(1923, 2) 68.2, 69.4	(1923, 2)	68, 73.2,
St. Louis College of Phys. and Surgs.	(1923, 4) 66, 67.1,	73,	74.4
Meharry Medical College		(1921)	59.5
Saratov University, Russia		(1918)*	59
Osteopaths			59.4, 60.5, 61.9, 71.5

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Johns Hopkins University		(1922)	N. B. M. Ex.
Harvard University		(1917)	N. B. M. Ex.

* Graduation not verified.

† No record of this school.

Book Notices

SURGERY OF THE SPINE AND EXTREMITIES. A Text Book for Students and Practitioners. By R. Hunstall Taylor, B.A., M.D., F.A.C.S., Professor of Orthopaedic Surgery in the University of Maryland and College of Physicians and Surgeons. Cloth. Price, $7.50. Pp. 550, with 604 illustrations. Philadelphia: P. Blakiston's Son & Co., 1923.

This is intended to be a brief and useful textbook on orthopedic surgery, and the author has made no attempt to make it encyclopedic; but he has attempted to cover such a vast field that many subjects, of necessity, are scantily treated. The book is divided into three parts. Part I deals with orthopedic technic, and is written particularly for the instruction of nurses, students and house physicians. While this information may be of use to those for whom it is written, it leaves relatively little space for the consideration of affections of the spine and the extremities. Part II is devoted to a consideration of spinal affections. This section begins with the discussion of tuberculosis of the spine. Here, as elsewhere, the author uses the adjective "tubercular" instead of the correct word, "tuberculous," which is surprising. "Tubercular" means "knobby," and may be applied to a potato, but not to a tuberculous spine. The discussion of tuberculosis of the spine is comprehensive and well illustrated, except for the roentgenograms, which here, as elsewhere in the book, are almost valueless. The remaining half of this section deals with nontuberculous affections of the spine. The chapter devoted to lateral curvature of the spine contains a full discussion of the subject. Part III deals with affections of the extremities. In discussing the treatment of tuberculosis of the hip joint, the author advises excision of the tuberculous focus in the bone when it shows signs of increasing in size in spite of immobilization of the joint, and even goes so far as to advise cutting through a healthy hip joint to reach a focus in the neck of the femur. The chapters dealing with coxa vara, and the sections on tuberculosis and other affections of the knee joint, are not up to standard. The discussion of flatfoot deserves notice. The chapters on infantile paralysis and spastic paralysis also are good. The author goes into detail in the operative treatment of poliomyelitis. Much space is given to original studies and methods in osteoclasis, tendon transplantation, anthropometry, Pott's disease, scoliosis, posture, clubfoot and flatfoot, mobilization of joints, treatment of sinuses, and other subjects that the author has found useful. The book is profusely illustrated, although some of the illustrations are old. The author's kyphotone is described in detail, and its use made clear by illustrations.

PULMONARY TUBERCULOSIS. ITS DIAGNOSIS AND TREATMENT. A Handbook for Students and General Practitioners. By John Guy, M.D., D.P.H., F.R.F.P. & S., Deputy Medical Officer of Health and Tuberculosis Officer for the City of Edinburgh. Cloth. Price, 16 shillings net. Pp. 307, with 51 illustrations. Edinburgh: Oliver & Boyd, 1923.

The world-wide decline in the death rate of tuberculosis is considered in this book from a biologic, sanitary, economic and educational standpoint. All nations, apparently, except Ireland have thus been benefited. It is safe to assume that, in the last thirty years, death certification has been fairly accurate, but that, in the previous twenty years, many mistaken diagnoses were made. The mistakes on one side probably balance those on the other, and the mortality curves may be taken as approximately correct. The credit for reducing the mortality of tuberculosis is not due to any one factor but to all factors working together. The result of the discussion between von Behring, Calmette and others of the portal of entry of infection is that all recent reliable research tends to establish more firmly than ever the respiratory tract as the main portal of entry in pulmonary tuberculosis. One hesitates to accept the author's statement that there are no cases of active tuberculosis without some disturbance of the temperature, although this also is the rule. The author believes the converse true: that if there is no fever there is no active phthisis. This simple test, he says, should be carried out much more carefully than is commonly done, and more reliance should be placed on it. Cog-wheel breathing is probably the result of cardiac systole affecting a bronchus, and its significance is of little importance. The tuberculin test is not positive in the new-born child because it has not yet been infected. The sum total of all tuberculin tests, it is said, is that with growing experience one is less and less inclined to attach much importance to their diagnostic value. Diagnosis in any suspected case is the combined result of a careful survey of the history and constitutional symptoms, and of the findings at physical examination. The earliest changes to be noted in the breath sounds in tuberculosis are that (1) inspiration becomes harsher and raised in pitch, and (2) expiration is slightly prolonged. It is interesting—the author lives in Scotland—to read that tuberculosis can be cured in any climate. It should be treated, however, where the patient expects to live when recovered. Of much greater importance than climate is careful medical supervision, attention to details, and careful feeding. Formerly, the "rest cure" was carried too far. Patients were converted into perpetual loafers, who "got well" by resting and who thought that to keep well they must rest. Thus, rest was their first consideration. Tuberculin has failed altogether, it is said, to fulfil the promises to which its introduction gave rise. It should not now be classed as a specific. There have been at least eighty varieties of tuberculin placed before the profession at one time or another, and each meant that its originator had tried previous ones, which failed.

THE DETERMINATION OF HYDROGEN IONS. An Elementary Treatise on the Hydrogen Electrode, Indicator and Supplementary Methods. With an Indexed Bibliography on Applications. By W. Mansfield Clark, M.A., Ph.D., Professor of Chemistry, Hygienic Laboratory, United States Public Health Service. Second edition. Cloth. Price, $5. Pp. 480, with 42 illustrations. Baltimore: Williams & Wilkins Company, 1923.

The first edition of this book was a pioneer in that realm of science in which physics, chemistry and the biologic sciences find common ground; namely, the theories and practices of hydrogen ion concentration. It was to be expected, therefore, that Clark's work, even with the imperfections characteristic of all pioneer contributions, would find a ready reception. Such has been the case so that the second edition is available in a relatively short time for such a painstaking work. As was pointed out in the previous review (THE JOURNAL, April 23, 1921, p. 1190), the contents of the book are still presented in a manner too difficult to be of ready reference to the average physician. It is gratifying, however, to note that some of THE JOURNAL's former criticisms do not apply to the second edition. For instance, the author's directions as to the details of depositing platinum black on the hydrogen electrode are now given. Such points the trained adventurer in the hydrogen ion measurement wants, and no one is better able to give them than Dr. Clark; it is hoped that some day Dr. Clark will write a primer on this subject. The bibliography of the second edition is considerably larger than that of the first, and includes much on enzymes, blood, and the determination of acidosis. The book is useful to those interested in digestion studies, biologic reactions, preparation of mediums and many other applications that are affected by p_H. All who desire knowledge of the fundamentals of electrometric and colorimetric hydrogen ion determinations will find this book serviceable, scholarly and reliable.

DIE SEELE DES KINDES. Beobachtungen über die geistige Entwicklung des Menschen in den ersten Lebensjahren. Von W. Preyer. Nach dem Tode des Verfassers bearbeitet und herausgegeben von Karl Ludolf Schaefer. Ninth edition. Boards. Price, $3.20. Pp. 408, with 4 illustrations. Leipsic: Th. Griebens Verlag, 1923.

Since the first edition of this work, "The Soul of the Child," which appeared more than twenty years ago, many advances have been made in the field of psychogenic research. This progress is recorded by the authors. The work is divided into three parts. Part I covers the development of sight, hearing, the tactile sense, taste, fear and surprise; Part II, the development of the will (mind), including voluntary activities, natural impulse and reflexes, and instinctive action; Part III, the development of the intellectual faculties, speech and individuality. The text is followed by a chronological review of human development in general from earliest infancy through the third year. This work, which was among the first in the field of psychologic research of early childhood, has been extensively revised since the last edition, which appeared in 1912.

Medicolegal

Charitable Hospitals Not Liable to Strangers

(Foley v. Wesson Memorial Hospital (Mass.), 141 N. E. R. 113)

The Supreme Judicial Court of Massachusetts, in overruling exceptions to verdicts directed for the defendant in this action and another, says that the parties agreed that the defendant was a public charitable organization and that the ambulance that struck and injured the plaintiffs while they were on the sidewalk was owned by the defendant and was being used at the time of the accident in connection with its work as a hospital. Admittedly there was evidence for the jury of the due care of the plaintiffs and of negligence on the part of the defendant's employee who operated the ambulance. But this court has held that a charitable corporation is not liable for the negligence of its servants, and that such exoneration exists from liability for negligence of the managers in selecting incompetent subordinate agents, as well as for the negligence of such subordinate agents selected with care. Moreover, the same principle applied to a recipient of the charity has been applied in case of injuries to a servant. Here, however, it was forcibly urged for the plaintiffs that this exemption of a charitable institution from liability for the negligence of its servants should not be extended to cases in which the injury is inflicted on a stranger, as in the present cases. But under the Massachusetts doctrine, that these trust funds cannot be used to compensate wrongs committed by agents of those administering the funds, there is no ground for distinction between liability to a patient and liability to a stranger. If, as matter of public policy, there should be a modification of the law in this commonwealth exempting charitable organizations from liability for the negligence of their servants, such change must be made by the legislature. It was unnecessary to consider whether the defendant could be held for "wilful, wanton, and reckless misconduct" of its employee, as alleged in the second count, because the evidence would not support a finding of such misconduct. It did not appear that the operator of the machine saw the plaintiffs; and apparently his failure to stop the ambulance before it left the road, and struck the plaintiffs, who were on the sidewalk, was due mainly to the failure of the brakes to hold, because of grease inside the brake band.

Expert Need Not Get Book Nor Point Out Passage

(Hoffschlaeger Company, Limited, v. Fraga (U. S.), 290 Fed. R. 146)

The United States Circuit Court of Appeals, Ninth Circuit, in affirming a judgment for damages for personal injuries, in favor of plaintiff Fraga, says that in the course of the trial a medical expert called by the plaintiff was asked on cross-examination if he had any authority to support certain statements made by him in the course of his cross-examination. The witness named certain authorities and said that they were at his home. The defendant thereupon moved the court for an order requiring the witness to produce the authorities, but the motion was denied. Again, the same witness was asked to turn to a passage in a certain work referred to by him on cross-examination, but the court refused to permit the witness to do so. There is a conflict of authority as to the use that may be made of scientific books, and more especially of medical treatises, on the examination of expert witnesses. It is very generally agreed that the treatises themselves are not competent evidence, so that the chief conflict arises as to the extent of their use on cross-examination. Many courts hold that they cannot be used at all, unless the witness on direct examination bases his opinion on some particular authority, in which case the authority may be used for the purpose of contradiction, but for no other purpose. A much more extended use is permitted, however, in other jurisdictions. But this court need not concern itself with the rule or the limitations on the rule here, because it was apparent that counsel for the defendant did not bring himself within any known rule on the subject. Clearly, the court did not abuse its discretion in refusing to send the witness from the stand to his home to procure a book for the use of counsel, nor did it err in refusing to require the witness to examine a treatise to enable him to point out some line or paragraph that might support or contradict his testimony. If counsel desired to contradict the witness by some statement of the author, he should have called the attention of the witness to the statement, and not consume the time of the court by asking the witness to look for something that might or might not exist.

May Support Expert Witness Aggressively Attacked

(Belshe v. Seaboard Air Line Ry. Co. (N. C.), 119 S. E. R. 492)

The Supreme Court of North Carolina holds that there was no error in allowing the plaintiff in this personal injury case to ask two physicians, both professional experts, as to the general character as physician and surgeon of a physician who was the plaintiff's witness. The court says that this physician himself was examined as an expert witness for the plaintiff, and had given an opinion as to the nature and extent of the plaintiff's injuries, ascertained from an examination in the line of professional duty, and in this respect had been made the subject of aggressive attack by the defendant, both as to his character for truthfulness and as to his professional skill. In such a case it was eminently right that the plaintiff should be allowed to support and strengthen his witness in both respects from the testimony of other witnesses who were themselves qualified to speak on the question.

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 15-18 Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association of Anatomists, Buffalo, N. Y., April 16-19. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Secretary.

American Climatological and Clinical Association, Atlantic City, May 1-3. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Hot Springs, Va., May 15-17. Dr. A. H. Curtis, 104 South Michigan Avenue, Chicago, Secretary.

American Orthopedic Association, Baltimore, May 15-17. Dr. Forrest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Surgical Association, Baltimore, April 17-19. Dr. Robert B. Greenough, 8 Marlborough Street, Boston, Secretary.

Arizona Medical Association, Phoenix, April 24-26. Dr. D. F. Harbridge, Goodrich Building, Phoenix, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. Thomas McCrae, 1929 Spruce Street, Philadelphia, Secretary.

California Medical Association, Los Angeles, May 12-15. Dr. Emma W. Pope, Balboa Building, San Francisco, Secretary.

Georgia, Medical Association of, Augusta, May 9-11. Dr. Allen H. Bunce, Healey Building, Atlanta, Secretary.

Hawaii, Medical Society of, Honolulu, April 26-28. Dr. W. K. Chang, McCandless Block, Honolulu, Secretary.

Illinois State Medical Society, Springfield, May 6-8. Dr. W. D. Chapman, Silvis, Secretary.

Iowa State Medical Society, Des Moines, May 7-9. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Wichita, May 7-8. Dr. J. F. Hassig, 800 Minnesota Avenue, Kansas City, Secretary.

Louisiana State Medical Society, Opelousas, April 21-24. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-24. Dr. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.

Mississippi State Medical Association, Jackson, May 13-15. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Springfield, May 6-8. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.

National Tuberculosis Association, Atlanta, Ga., May 7-10. Dr. George M. Kober, 370 Seventh Avenue, New York, Secretary.

Nebraska State Medical Association, Omaha, May 13-15. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.

New York, Medical Society of the State of, Rochester, April 22. Dr. Edward L. Hunt, 17 West 43d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Raleigh, April 15-17. Dr. L. B. McBrayer, Sanatorium, Secretary.

Ohio State Medical Association, Cleveland, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 13-15. Dr. C. A. Thompson, 508 Commercial Nat'l Bank Bldg., Muskogee, Sec'y.

South Carolina Medical Association, Orangeburg, April 15-17. Dr. Edgar A. Hines, Seneca, Secretary.

Tennessee State Medical Association, Knoxville, April 8-10. Dr. J. F. Gallagher, Jackson Bldg., Nashville, Secretary.

Texas, State Medical Association of, San Antonio, April 29-May 1. Dr. Holman Taylor, 207½ W. 11th Street, Fort Worth, Secretary.

Western Electro-Therapeutic Association, Kansas City, April 17-18. Dr. Charles Wood Passett, 115 E. 31st Street, Kansas City, Mo., Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

7: 81-176 (Feb.) 1924

Changes in Rabbits' Eyes Following Injection of Living Tubercle Bacilli Into Common Carotid Artery. W. C. Finnoff, Denver.—p. 81.
Xerophthalmia, Keratomalacia and Xerosis Conjunctivae. O. Blegvad, Copenhagen, Denmark.—p. 89.
Reform Diet as Therapeutic Measure in Ophthalmic Practice. G. H. Bell, New York.—p. 118.
Osteoma of Orbit. A. J. Bedell, Albany, N. Y.—p. 126.
Liquefaction and Absorption of Crystalline Lens with Its Possible Relation to Lenticular Opacities. C. A. Clapp, Baltimore.—p. 131.
Astercid Hyalitis (Benson's Disease). J. M. Ball, St. Louis.—p. 138.
Prolonged Retention of Foreign Bodies in Eyeball. F. A. Morrison, Indianapolis.—p. 139.
Caterpillar Conjunctivitis. B. H. Grove, Buffalo.—p. 140.

American Journal of Physiology, Baltimore

67: 445-649 (Feb.) 1924

*Presence of Insulin Like Substance in Gastric and Duodenal Mucosa and Its Relation to Gastric Secretion. A. C. Ivy and N. F. Fisher, Chicago.—p. 445.
*Presence of "Gastrin" in Human Postmortem Pyloric and Duodenal Mucosa. A. C. Ivy and H. A. Oberhelman, Chicago.—p. 451.
*Distribution of Vitamin A in Urine and Some of Digestive Secretions. E. Cooper, Chicago.—p. 454.
*Effect of Intravenous Saline Solution on Leukocyte Count. C. S. Bluemel and R. Lewis, Boulder, Colo.—p. 464.
*Possible Hereditary Factors in Experimental Production of Edema and Xerophthalmia. L. M. Hejinian, Chicago.—p. 467.
*Effects of Temporary Anemia on Tone of Blood Vessels. E. Bulatao, N. B. Laughton and A. J. Carlson, Chicago.—p. 474.
Determination of Heat Production in Dogs by Gasometer Method. H. D. Kitchen, Rochester, Minn.—p. 487.
*Lymph Pressure. F. C. Lee, Boston.—p. 498.
*Effect of Intravenously Injected Saline Solutions on Volume Excretion and Nitrogen Elimination by Kidneys. J. Blumenstock and A. B. Luckhardt, Chicago.—p. 514.
Penetration of Acid and Alkali into Living Cells and on a Protective Mechanism Operative in Cultures of Amebocyte Tissue. L. Loeb and E. Gilman, St. Louis.—p. 526.
*Relationship of Blood Sugar to Thyroid and Suprarenal Size in Fraternity of Pigeons. O. Riddle, H. E. Honeywell and J. R. Spannuth, Cold Spring Harbor, N. Y.—p. 539.
Comparative Studies of Digestion. III. Digestion in Coelenterates. M. Bodansky, Ithaca, N. Y.—p. 547.
Output of Epinephrin from Suprarenals During Cerebral Anemia. J. M. Rogoff, Cleveland.—p. 551.
*Effects of Exposure to High Temperatures on Circulation in Man. E. F. Adolph and W. B. Fulton, Pittsburgh.—p. 573.
Cereal Values as Determined by Number, Fertility and Composition of Eggs. C. B. Pollard and R. H. Carr, Lafayette, Ind.—p. 589.
*Cryptorchidism, Vasectomy and Scrotal Insulation. C. R. Moore and R. Oslund, Chicago.—p. 595.
Effect of Radiant Energy on Excretion of Parenterally Introduced Simple Salts. O. Barkus and F. C. Balderrey, Perrysburg, N. Y.—p. 608.
Action Currents from Stomach. C. P. Richter, Baltimore.—p. 612.
*Attempts to Maintain Life of Totally Pancreatectomized Dogs Indefinitely by Insulin. N. F. Fisher, Chicago.—p. 634.

Insulin-Like Substance in Gastric Mucosa.—An insulin-like blood sugar reducing substance was found by Ivy and Fisher in hogs' gastric and duodenal mucosa which has the therapeutic action of insulin on a diabetic dog. From fifty to seventy-five times more insulin can be extracted from the pancreas of cattle than from the gastric mucosa of hogs.

Gastrin in Gastric and Duodenal Mucosa.—Results obtained by Ivy and Oberhelman show that "gastrin" is present in human gastric and duodenal mucosa to the same extent as it is present in hogs' mucosa, and that in the study of gastric secretion, at least, normal or physiologic preparations should be used for consistent and unquestionable results. An interesting reaction occurred in one dog, consisting of marked edema of the face, when human "gastrin" from a 4 day old body was injected.

Vitamin A in Urine and Digestive Secretions.—Cooper asserts that on diets high in vitamin A, the urine (man, dog) contains a demonstrable quantity of this vitamin. On ordinary diets and in prolonged starvation the urine is nearly, if not completely, free from vitamin A. Pure gastric juice (Pawlow pouch) of dogs on high vitamin A diets contains vitamin A, but on ordinary diet the gastric juice of man and dog appears to be free from this vitamin. Demonstrable quantities of vitamin A are not present in human saliva (high and low A diet), or in the old pancreatic juice (high diet). It seems probable that the kidneys and the digestive glands have a "threshold" limit for vitamin A retention in the body. When the body is flooded with this vitamin by an excess in the diet, the absorption is faster than the storage and destruction, there follows a rise of the vitamin concentration in the blood, and consequent vitaminuria and overflow into some of the digestive secretions. Since a considerable part of the vitamin A in milk seems to be in solution outside the milk fat, the threshold limit for vitamin A overflow in the mammary glind is either relatively low, or else it is a true vitamin A secretory process in this gland.

Effect of Intravenous Saline Solution on Leukocyte Count.—Bluemel and Lewis' investigations seem to show that intravenous infusions of physiologic solution of sodium chlorid cause a marked increase in the leukocytes of the blood if the number of leukocytes is normal when the infusion is given. The leukocytosis was at its highest at the end of six hours in a series of counts made at three-hour intervals. No material increase in leukocytes ensues if there is a high leukocytosis before the infusion.

Low Protein Diet and Xerophthalmia.—Feeding synthetic vitamin A-free diets to rats did not produce xerophthalmia. On a more natural and less purified diet xerophthalmia occurred in two out of three litters. Hejinian's experiments revealed no definite factor of heredity in the development of edema in rats on a low protein diet.

Effects of Temporary Anemia on Blood Vessels.—According to Bulatao, Laughton and Carlson only the kidney (and possibly the leg) shows prolonged vascular spasm following temporary anemia. This suggests either a special highly irritable neuromuscular mechanism in the kidney blood vessels or the presence in the other organs of conditions that mask the vascular spasm. In the spleen, for instance, there may be filling of the blood sinuses or decreased tone of the capsular muscle. In the intestine the production of secretion (paralytic secretion) may mask any vascular spasm, and the abnormally great formation of lymph may do the same in the thyroid gland.

Measuring Lymph Pressure.—A method is described by Lee by which lymph pressures in the thoracic duct have been studied and kymographic records made. It was found that the lymph pressure in the thoracic duct reflected the intrathoracic pressure, being highest at the end of expiration and depending on respiration mainly for its high values. Under ordinary conditions in the dog lymph rose by the end of a half hour to a height equivalent to a pressure of 11 mm. in a glass tube of 3 mm. internal diameter inserted into the venous angle in such a manner that the contents of the thoracic duct were directed solely into the tube; under conditions of forced respiration a pressure of 26 mm. was recorded at the end of sixteen minutes.

Action of Calcium in Parathyroid Tetany.—On the basis of this work, and that of Luckhardt and Goldberg, the authors assume that calcium has some inherent physiologic or pharmacologic property that operates in the amelioration of the symptoms of parathyroid tetany, and that the diuresis produced by the injection of Ringer's solution is not the factor of prime importance in the improvement of the condition.

Blood Sugar and Thyroid and Suprarenals.—The data presented by Riddle, Honeywell and Spannuth supply an unusual indication that the thyroid and suprarenals are both concerned in establishing the normal concentration of sugar in the blood.

Effect of High Temperatures on Man.—According to Adolph, exposure to high temperatures increases the loss of carbon dioxid from the blood through the skin and lungs. This lowering of the carbon dioxid tension increases the hydrogen ion concentration of the blood and ultimately leads to an excretion of alkali from the blood. The carbon dioxid dissociation curve of the blood is not significantly altered. The peripheral blood vessels are greatly dilated during

exposure to high temperatures, and this dilatation continues indefinitely. The lack of a high resistance in the peripheral blood vessels prevents blood from returning to the heart. The heart rate increases steadily and rapidly, and is even able to increase the systolic blood pressure. In spite of this compensating activity on the part of the heart, the blood flow back to the heart finally becomes inadequate. At this point circulatory failure or shock is complete, with faintness. The rise in skin temperature seems to play the initiatory part in the control of the respiratory and circulatory reactions.

Body Heat Causes Sterility.—Moore and Oslund believe they have demonstrated that an animal can be sterilized by its own body heat and that undescended testes occurring in nature are undoubtedly degenerate because of the higher temperature to which they have been subjected.

Pancreatectomized Dogs Kept Alive with Insulin.—Fisher found that some totally pancreatectomized dogs may be kept alive and in fairly good nutrition for at least eight months on insulin. The normal body weight cannot be maintained, and even when the insulin doses are so regulated that little or no sugar appears in the urine, the polyphagia and some polyuria are present. The determining factor in the temporary or indefinite survival of pancreatectomized dogs on insulin appears to be capacity of the duodenal stump of the pancreatic duct to regenerate pancreatic tissue, as such regeneration appeared in the two dogs surviving indefinitely, or at least up to eight months, but not in the other dogs. Insulin probably does not represent the entire pancreas hormone complex, since in the total absence of the pancreas insulin cannot maintain life or does not control all the diabetic symptoms (subnormal weight, polyphagia, polyuria).

American Journal of Public Health, Albany

14: 95-180 (Feb.) 1924

Differentiation of Human and Soil Strains of Aerogenes Section of Colon Group. M. Levine and C. S. Linton, Ames, Ia.—p. 95.
Contributory Causes of Death: Importance and Suggestions for Classification. L. I. Dublin and G. H. Van Buren, New York.—p. 100.
Relation of Public Health Nurse to Practicing Physician. Viewpoint of Physician. I. S. Wile, New York.—p. 106.
Id. Viewpoint of Nurse. A. Dines, New York.—p. 111.
Id. Viewpoint of Health Officer. H. F. Vaughan, Detroit.—p. 114.
Beccari Process of Garbage Disposal. J. W. Smith, New York.—p. 119.
*Effect of Carbonation on Bacteria in Beverages. J. R. Donald, C. L. Jones and A. R. M. MacLean.—p. 122.
*Tuberculosis Survey of Philadelphia. M. P. Horwood, Cambridge, Mass.—p. 128.

Carbonation of Beverages Not Germicidal.—According to Donald, Jones and MacLean, in the manufacture of carbonated beverages it is practically impossible to secure a sterile product without heat treatment after the bottle has been sealed. However, in plants operated under rigid supervision and the best sanitary conditions, it is possible to produce a bottled beverage of low bacterial count. Carbonation prevents multiplication of the bacteria and actually causes a reduction in count.

Measures to Combat Tuberculosis.—Horwood recommends the establishment of a separate division of tuberculosis; more complete reporting of cases of tuberculosis; one tuberculosis dispensary having fifteen clinic hours per week per single physician for every 50,000 people; requiring physicians and nurses attached to tuberculosis clinics to have special training; that 1,500 additional beds for advanced cases of tuberculosis be provided, and that to make these beds available, the general hospitals be requested to admit cases of pulmonary tuberculosis in separate wards or buildings; that 1,200 additional sanatorium beds be provided to meet the needs of the community; that the state sanatoria accept only early cases of tuberculosis, and those having a favorable prognosis, so that these facilities may be primarily available to hopeful cases; that popular health education be continued and extended as much as possible; that the medical examination of school children place greater emphasis on the detection of tuberculosis in children; that all food handlers be required to obtain certificates of health only after thorough examinations by physicians of the health department, or by some clinic officially authorized to make these examinations.

California State Journal of Medicine, San Francisco

22: 45-70 (Feb.) 1924

Principle and Technic of Drainage in Surgery of Gallbladder and Bile Tract. A. S. Lobingier, Los Angeles.—p. 45.
*Tumors of Testicle. F. Hinman, A. A. Kutzmann and T. E. Gibson, San Francisco.—p. 48.
Goiter in Great Basin. G. W. Middleton, Salt Lake City.—p. 52.
*Spontaneous Perirenal Hematoma. L. J. Roth, Los Angeles.—p. 54.
Incidence of Intestinal Parasites. M. C. Cheney, San Francisco.—p. 57.
Possibility of Remote Effects in Head Injuries. C. E. Mordoff, Fresno.—p. 59.
Tuberculosis in Pregnancy. G. H. Evans, San Francisco.—p. 61.
Fraudulent Diplomas and State Licenses. C. B. Pinkham.—p. 63.
*Peculiar Manifestation of Focal Infections. Treatment and Apparent Cure. W. A. Shaw, Elko, Nev.—p. 64.

Tumors of Testicle.—Tumors of the testicle are divided by Hinman, Kutzmann and Gibson into seminomas and teratomas. It is stated that a small number of cases might be cured by simple castration, provided metastases have not taken place, but because of the impossibility of recognizing them clinically, they should, in the interest of the majority, be unhesitatingly exposed to the risk of radical surgery. The immediate mortality is less than 10 per cent., and it will undoubtedly diminish as more experience is obtained.

Spontaneous Perirenal Hematoma.—There was no evidence of lithiasis, neoplasm, tuberculosis, aneurysm, suprarenal disease or hemophilia in Roth's case. A nephritis of fibrous type was present. A correct diagnosis during the early stage of the disease was practically impossible, and at the time when this might have been made, the patient's condition was so grave as to forbid examination. Taking into consideration all of the findings in this case, supplemented by failure to detect any pathologic lesion responsible for the hemorrhage, it seems proper to classify it as a spontaneous perinephritic hematoma.

Infected Tonsils Cause Mental Symptoms.—Shaw reports three cases in which marked mental symptoms, such as melancholia, homicidal mania, etc., were completely relieved by tonsillectomy. The cases are classed as being due to focal infection from diseased tonsils.

Colorado Medicine, Denver

21: 25-52 (Feb.) 1924

Centenary of Pasteur and Lister. H. G. Wetherill, Denver.—p. 29.
Acute Appendicitis with Pain in Bladder as Predominating Symptom. R. J. Groom and W. W. Reed, Boulder.—p. 34.
Differential Diagnosis of Causes of Abdominal Pain in Infancy and Childhood. E. Friedman, Denver.—p. 39.

Journal of Experimental Medicine, Baltimore

34: 1-190 (Jan.) 1924

*Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever. A. E. Cohn and H. F. Swift, New York.—p. 1.
Surface Tension of Serum. VII. Significance of Maximum Time-Drop of Serum Solutions. P. L. DuNouy, New York.—p. 37.
Attempt to Isolate Filter-Passing Virus in Epidemic Influenza. H. K. Ketweiler and W. R. Hodge, Toronto.—p. 43.
Brain Lesions of Domestic Rabbit. J. E. McCartney, New York.—p. 51.
Experimental Study of Mitochondrial Changes in Typhoid. F. M. Nicholson, New York.—p. 63.
*Causes of Gallstone Formation. I. Experimental Cholelithiasis in Absence of Stasis Infection and Gallbladder Influences. P. Rous, P. McMaster and D. R. Drury, New York.—p. 77.
*Id. II. On Certain Special Nuclei of Deposition in Experimental Cholelithiasis. P. Rous, D. R. Drury and P. D. McMaster, New York.—p. 97.
*Rôle of Anhydremia and Nature of Toxin in Intestinal Obstruction. T. Ingvaldsen, A. O. Whipple, L. Bauman and B. C. Smith, New York.—p. 117.
Microbic Virulence and Host Susceptibility in Parathyroid-Enteritis Infection of White Mice. III. Immunity of Surviving Population. L. T. Webster, New York.—p. 129.
Studies in Virulence. II. Increase in Virulence in Vitro of Strain of Pneumococcus. L. D. Felton and K. M. Dougherty, New York.—p. 137.
III. Influence of Hydrogen Ion Concentration and of Ingredients of Plain Broth on Virulence of Pneumococci. L. D. Felton and K. M. Dougherty, New York.—p. 155.
Reaction Product in Infections with Trypanosoma Lewisi Which Inhibits Reproduction of Trypanosomes. W. H. Taliaferro, Baltimore.—p. 171.

Electrocardiographic Evidence of Myocardial Involvement in Rheumatic Fever.—The heart was affected in thirty-five of thirty-seven cases of rheumatic fever, studied by Cohn and Swift. The evidence was of three sorts: first the duration of auriculoventricular conduction was increased, though not always, and usually not to the degree of causing heart block;

second, alteration in the ventricular complex of the electrocardiogram affecting in certain instances the Q R S complex and in others either the interval between R wave and T wave, or the T wave itself; and third, the occurrence of numerous irregularities in cardiac rhythm. These signs are characteristic of cardiac involvement, but are not specific for rheumatic fever. They are signs which are, however, to be taken as evidence when the heart is affected by the rheumatic process even though an inference cannot be drawn as to the nature or the permanence of the injury.

Experimental Cholelithiasis.—Rous and his associates found that gallstones frequently form in dogs intubated for the collection of bile under sterile conditions, in the absence of stasis and of gallbladder influence. The stones consist almost entirely of calcium carbonate and calcium bilirubinate, and they are uniform in character. They are not the result of bile loss, for similar ones may be recovered from the wall of glass tubes interpolated in ducts with intestinal connection undisturbed.

Inflammation Causes Gallstone Formation.—The evidence Rous, Drury and McMaster collected is interpreted to support the view that the development of carbonate stones in human beings and in dogs may be a consequence, not of changes in the bile caused by micro-organisms, nor of the elaboration of an inflammatory exudate rich in calcium salts, but merely of inflammation such as leads to lessened motility of the duct system with the accumulation of organic débris.

Cause of Intestinal Obstruction.—Data are presented by Ingvaldsen and others to show that anhydremia does not play a leading rôle in causing symptoms in intestinal obstruction. Chemical changes in the blood corresponding with those noted by previous investigators were noted. Additional data regarding the chemistry of the toxin found in the obstructed intestine of dogs were obtained.

Journal of Industrial Hygiene, Boston

5: 359-397 (Feb.) 1924

Physical Examinations with Follow-up Work in Department Store. C. A. Swan and A. B. Emmons, 2d, Boston.—p. 359.
Recording Occupational Skin Diseases. C. G. Lane, Boston.—p. 366.
Industrial Lighting. D. R. Wilson.—p. 371.
Future of Child Labor Question. H. G. Rowell, New Bedford.—p. 382.
Action of Irritant Gases on Respiratory Tract. H. W. Raggard, New Haven, Conn.—p. 390.

Journal of Urology, Baltimore

11: 1-110 (Jan.) 1924

Selective Bacteriostatic Action of Gentian Violet and Other Dyes. J. W. Churchman, New York.—p. 1.
*Urinary Antiseptics. H. H. Young, Baltimore.—p. 19.
*Id. Clinical Results Following Oral Administration of Acriflavine. E. Davis, Omaha.—p. 29.
Vesical Neck Obstructions Operated by Cautery Punch. J. R. Caulk and J. H. Sanford, St. Louis.—p. 45.
*Carcinoma of Prostate Associated with Benign Hypertrophy. E. C. Shaw, Baltimore.—p. 63.
*Value of "Urea Concentration Factor" in Urology. F. S. Patch and I. M. Rabinowitch, Montreal.—p. 75.
Standardized Roentgen-Ray Technic in Urologic Examinations. J. W. Marchildon, St. Louis.—p. 83.
*Kidney Stone of Sixty Years' Duration. C. E. Barnett, Fort Wayne, Ind.—p. 99.
Duplication of Left Renal Pelvis and Ureter. Bilateral Pyelonephritis with Atrophy. G. J. Thomas, Cleveland.—p. 105.

Urinary Antiseptics.—Young discusses the relative value of antiseptics, and also routes of administration. He believes that in the near future physicians will be using the intravenous method of treating many infections, both general and local; that the future will bring out important drugs that can be introduced intravenously and which will probably not only cure acute septicemias, otherwise fatal, by rapid sterilization, but also serious chronic local infections such as those encountered in the urinary tract.

Internal Use of Acriflavine in Urinary Infections.—The experimental work which has led up to the internal administration of acriflavine is outlined by Davis, and the results obtained by the clinical use of this dye are summarized. A large proportion of cases of acute urinary infections have shown prompt improvement. Chronic urinary infections have not readily responded. Improvement was noted in only 60 per cent. of cases and in most of these the pus and bacteria reappeared in the urine after discontinuing the treatment. In acute anterior gonorrheal urethritis, acriflavine, administered orally, is not a dependable prophylactic for preventing the extension of the infection to the posterior urethra. Acriflavine administered orally is of benefit in acute posterior gonorrheal urethritis in that it lessens the duration and severity of the acute symptoms. Mild catharsis or slight nausea was observed in approximately 30 per cent. of the patients. In 5 per cent. of the cases, vomiting and diarrhea were such as to contraindicate the use of the drug. No further ill effects have been noted.

Carcinoma and Hypertrophy of Prostate.—Shaw reports a case of benign prostatic hypertrophy in which perineal prostatectomy was performed. On microscopic examination of the specimen, a small unsuspected area of carcinoma was found. Serial sections showed two separate areas of carcinoma limited to the right lateral lobe and completely surrounded by normal and hypertrophied prostatic glands. The carcinoma was of the pure adenocarcinoma type. The line of demarcation between the carcinomatous area and surrounding adenomatous tissue was everywhere distinct.

Urea Concentration Factor Important.—Patch and Robinowitch believe that in lesions of the kidneys, whether primarily or secondarily associated with azotemia or other evidence of impairment of the excretion of nitrogenous substances, the determination of the urea concentration factor is of greater value in diagnosis and a better index of progress than the individual consideration of either the blood urea nitrogen or urine urea concentration.

Large Kidney Stone Present Sixty Years.—Barnett's patient was a woman who had had a stone in one of her kidneys for sixty years. The stone weighed 6 ounces, 7 drams, 10 grains, and measured 5½ by 2 11/16 inches.

Kansas Medical Society Journal, Topeka

24: 31-62 (Feb.) 1924

Ileus. H. L. Charles, Atchison.—p. 31.
Relation of Health Officer to Public and Practicing Physician. M. O. Nyberg.—p. 33.
Family Physician and Certain Preventive Disease Measures. L. B. Gloyne, Kansas City.—p. 36.
Doctor Tries Green Fields. R. Ade.—p. 41.
Infection of Upper Lip. L. P. Engel.—p. 44.

Laryngoscope, St. Louis

34: 1-82 (Jan.) 1924

Organ of Smell. J. Wright, Pleasantville, N. Y.—p. 1.
Intranasal Carcinoma in Association with Nasal Polypi. A. J. Wagers, Philadelphia.—p. 12.
Optic Neuritis Secondary to Sinus Disease; Case. I. B. High, Reading, Pa.—p. 17.
Ethmoiditis. W. F. Moore, Philadelphia.—p. 26.
Treatment of Paranasal Sinus Disease in Infants and Young Children. L. W. Dean, Iowa City.—p. 30.
Peanut in Bronchi; Three Cases. M. E. Newman, Buffalo.—p. 35.
Retropharyngeal Abscess. J. A. Babbitt, Philadelphia.—p. 37.
Foreign Body in Larynx, with Absence of Cough Reflex. G. T. Ross, Montreal.—p. 42.
Mucosis Otitis. F. O. Kettelkamp, Colorado Springs.—p. 44.
Varix Complicating Chronic Tonsillitis. W. Herbert, Brooklyn.—p. 50.
Chronic Aural Discharge. J. G. Callison, New York.—p. 52.
Bronchoscopic Observations on Cough Reflex in Tonsillectomy Done Under General Anesthesia. M. C. Myerson, Brooklyn.—p. 63.
Scialytic Light for Operating Room. S. McCullagh, New York.—p. 69.

Michigan State Medical Society Journal, Grand Rapids

23: 37-90 (Feb.) 1924

Clinical Types of Goiter: Adenomatous Type; Gases. H. J. Vanden Berg, Grand Rapids.—p. 37.
Prognosis in Streptococcus Viridans Bacteremia. F. J. Smith, Detroit.—p. 41.
Four Months Through Europe with a Physio-Therapeutist. J. E. G. Waddington, Detroit.—p. 43.
Public Health. E. Ambert, Detroit.—p. 46.
Acute Infective Polyneuritis in Children; Cases. H. B. Mettel, Ann Arbor.—p. 47.
Dystocia Due to Fetal Causes. G. Kamperman, Detroit.—p. 49.
Nonspecific Protein Therapy in Arthritis. W. F. Petersen, Chicago.—p. 53.
Chronic Intestinal Indigestion. W. S. O'Donnell, Ann Arbor.—p. 56.
Anterior Poliomyelitis Complicating Pregnancy; Two Cases. N. F. Miller, Ann Arbor.—p. 58.

Insufflation of Fallopian Tubes in Its Relation to Sterility Problem. H. Henderson, Detroit.—p. 61.
Method of Holding Septal Membranes in Apposition After Submucous Resection Without Use of Packing. H. L. Simpson, Detroit.—p. 64.

Minnesota Medicine, St. Paul

7: 69-134 (Feb.) 1924

Clinical Significance of Pain in Area Supplied by Fifth Cranial Nerve. H. L. Parker, Rochester.—p. 69.
*Tumors of Spinal Cord: Surgical Treatment and Results. A. W. Adson, Rochester.—p. 79.
*Factors in Health and Disease That Affect Metabolic Rate. M. H. Hoffman, St. Paul.—p. 84.
Value of Basal Metabolic Rate in General Medical Practice. A. E. Mark, St. Paul.—p. 86.
Value of Basal Metabolism in General Surgical Practice. T. L. Chapman, Duluth.—p. 89.
Total and Basal Metabolism in Exophthalmic Goiter. W. M. Boothby, Rochester.—p. 91.
Obstetrics and General Practitioner. M. C. Bergheim, Hawley.—p. 92.
Clinical Features of Extrauterine Pregnancy. T. W. Weum, Minneapolis.—p. 101.
Review of Epidemic Encephalitis in Minnesota from 1919 to 1923 Inclusive. E. M. Hammes, St. Paul.—p. 106.
*Rectum as Factor in Chronic Focal Infection. W. A. Fansler, Minneapolis.—p. 110.

Operative Treatment of Tumors of Spinal Cord.—The records of 151 patients are reviewed by Adson. One hundred and eight are living; thirty-three are perfectly well and working; six are improved and doing some work; thirty-five are improved, but not working, and six improved for a time, but their symptoms returned, due to progression of the lesion. Fifteen patients are helpless, and thirteen were not traced. One hundred and sixty laminectomies were performed on the 151 patients, seven patients having had two laminectomies and one a triple laminectomy for extensive lesions. One hundred and nineteen neoplasms were found at the operating table, 80 per cent. of which had been diagnosed correctly. Sixty-one tumors were removed completely, 50 per cent. of the total number found, and thirty tumors were removed partially, 25 per cent. of the tumors found.

Factors Affecting Metabolism Rate.—The factors discussed by Hoffman are: muscular activity, temperature changes, specific dynamic action of food, medication, starvation. Muscular exertion increases the metabolic rate more than any other factor, and it is important to think of this factor when overnutrition or undernutrition is considered. The specific dynamic action of food stimulates the metabolic rate. The stimulating effect of protein on the metabolic rate should be considered in diseases in which rest is essential. Practically the only drugs that affect the metabolic rate are thyroid extract preparations and epinephrin. Starvation causes a decrease in the metabolic rate.

Rectum Source of Chronic Focal Infection.—In every case in which focal infection is suspected or where the diagnosis is obscure, Fansler urges that a careful rectal examination should be made.

Missouri State Medical Association Journal, St. Louis

21: 31-60 (Feb.) 1924

Focal Infection Within Abdomen. J. B. Deaver, Philadelphia.—p. 31.
Conditions Amenable to Relief or Cure Through Abdominal Surgery. E. P. Heller, Kansas City.—p. 33.
*Complications and Treatment of Measles. J. Zahorsky, St. Louis.—p. 35.
Management of Undernourished Infants. H. D. Chapin, New York.—p. 37.
*Heliotherapy and Joint Tuberculosis. A. O'Reilly, St. Louis.—p. 39.
Carcinoma of Cecum and Ascending Colon: Cases. W. S. Wiatt, St. Louis.—p. 41.
Outpatient Neuropsychiatric Clinic as Factor in Vocational Rehabilitation. F. M. Barnes, Jr., St. Louis.—p. 43.

Treatment of Measles.—Zahorsky has never seen a case of blindness resulting from measles. He keeps his patients in a bright room and when parents object, he points out the slight danger to the eyes but the great danger to the ears, larynx and lungs. Measles is best treated in the home. This is one disease that is not favored by hospitalization; on the contrary, statistics from hospitals and asylums show a very high mortality (up to 20 per cent.). In his series of 324 cases there were two deaths, or a mortality of 0.6 per cent. One baby died of pneumonia and empyema; another young child died from a laryngeal stenosis.

Heliotherapy in Joint Tuberculosis.—O'Reilly regards heliotherapy of great value in the treatment of joint tuberculosis. Its action is due to the stimulating effect of violet rays and accompanying air baths which improve the general condition and render the organism more capable of resisting the tuberculous infection. Heliotherapy can be used effectively at home. It requires, however, intelligence and care, and routine must be followed closely. It can and should be used wherever the sun shines.

Radiology, St. Paul

2: 59-120 (Feb.) 1924

Safety Value of Direct Measurement of Surface Dose in Roentgen-Ray Therapy. G. Holzknecht, Vienna.—p. 59.
Instruction of Undergraduates in Roentgenology. P. M. Hickey, Ann Arbor.—p. 62.
*Ventriculography. A. W. Adson, W. O. Ott and A. S. Crawford, Rochester, Minn.—p. 65.
Evaluation of Roentgen-Ray and Radium Therapy in Cancer. M. J. Sittenfield, New York.—p. 74.
Roentgenologic Diagnosis of Cholecystic Disease. R. D. Carman; W. C. MacCarty and J. D. Camp, Rochester, Minn.—p. 80.
*Deep Roentgenotherapy in Benign Hypertrophy of Prostate. G. F. Thomas and R. G. Giles, Cleveland.—p. 90.
Sarcoma of Bone. W. W. Wasson, Denver.—p. 95.
Nail Removed from Bronchus Under Fluoroscopic Guidance. P. P. Vinson and C. G. Sutherland, Rochester, Minn.—p. 99.
Use of Audion Amplifiers in Measurements of Beta Gamma Ray Intensities. V. F. Hess.—p. 100.
Film Developing in Lighted Room. L. S. Trostler, Chicago.—p. 104.

Ventriculography.—Evidence is given by Adson, Ott and Crawford that the ventriculogram aids in localizing tumors of the cerebrum, but it does nothing more than indicate obstructions below the aqueduct or the tentorium cerebelli. It does not always localize small lesions of the frontal and temporal lobes, but it does so very readily if there is a unilateral hydrocephalus. In view of the mortality attending ventriculography, it should be used as an adjunct in the diagnosis and localization of brain tumors in patients having indeterminate histories and findings, but should not take the place of an exhaustive neurologic examination.

Roentgenologic Diagnosis of Cholecystic Disease.—In a series of 343 cases reviewed by Carman, MacCarty and Camp, the roentgenologist was able to make a positive report of disease in 52.9 per cent. and a negative diagnosis in 44.6 per cent. of the cases when there was evidence of mild or extreme grades of disease. All gallbladders removed were examined by a pathologist and found to be diseased.

Rhode Island Medical Journal, Providence

7: 17-32 (Feb.) 1924

Local Anesthesia. R. E. Farr, Minneapolis.—p. 17.
Fractures of Forearm. A. A. Barrows, Providence.—p. 20.

Surgery, Gynecology and Obstetrics, Chicago

38: 143-187 (Feb.) 1924

Some Renal Tumors. W. I. deC. Wheeler, Dublin, Ireland.—p. 143.
*Primary Sarcoma of Penis: Report of Case. J. J. Joelson, Boston.—p. 150.
*Congenital Cerebral Hernia: Two Cases. F. M. Lampert, Moscow, Russia.—p. 159.
Hypercholesterolemia: Twelve Cases. A. O. Wilensky, New York.—p. 163.
Adhesions About Ascending Colon Simulating Chronic Appendicitis: Ten Cases. C. Davison, M. Davison and D. J. Royer, Chicago.—p. 171.
*Placenta Accreta. J. O. Polak and G. W. Phelan, Brooklyn.—p. 181.
*Papillary Tumors of Renal Pelvis. A. J. Scholl, Rochester, Minn.—p. 186.
*Intracranial Hemorrhage in New-Born. W. Sharpe and A. S. Maclaire, New York.—p. 200.
Surgical Significance of Pain. W. D. Haggard, Nashville, Tenn.—p. 207.
Pain Associated with Surgical Lesions of Eye. J. M. Patton, Omaha.—p. 209.
Intracranial Pain. J. F. Barnhill, Indianapolis.—p. 210.
Pain in Ear. F. M. Sulzman, Troy, N. Y.—p. 212.
Pain in Joints and Back. R. D. Kennedy, Globe, Ariz.—p. 214.
Pain Associated with Gynecologic Affections. R. R. Smith, Grand Rapids, Mich.—p. 216.
Pain Due to Pathologic Conditions of Genito-Urinary Tract. A. J. Crowell, Charlotte, N. C.—p. 218.
Pain in Upper Abdomen and Chest. C. H. Peck, New York.—p. 220.
Diabetes Insipidus with Acute Retention in Pregnancy. D. M. Vickers, Cambridge, N. Y.—p. 223.
Hernia Through Foramen of Winslow: Case. A. Ullman, Baltimore.—p. 225.
Compression Leverage Fractures of Ankle Joint. J. H. Stevens, Boston.—p. 234.

*Lymphaticostomy in Intestinal Obstruction. W. A. Costain, Toronto. —p. 252.
*Lymphaticostomy in Puerperal Infection. A. C. Edwards, Baraboo, Wis. —p. 256.
*Isolation of Submucosa as Aid in Intestinal Anastomosis. A. J. Graham, Chicago.—p. 259.
Abdominoscopy. O. P. Steiner, Atlanta, Ga.—p. 266.

Primary Sarcoma of Penis.—A case of fibrosarcoma of the glans penis of two years' duration is reported by Joelson. Two local excisions and a biopsy had been performed. There was no evidence of metastasis. Eight months after complete extirpation of the penis with dissection of both groins there was no evidence of recurrence or metastases. Thirty-five cases of sarcoma of the penis are collected from the literature and tabulated.

Congenital Cerebral Hernia.—The etiologic factors in one of Lampert's cases were (1) dystopy of the brain elements; (2) incomplete closure of the skull because of mechanical obstacles brought on by the dystopy; (3) protrusion of the meninges with formation of a meningeal cyst, partly because of disturbances of lymph and blood circulation and the consequent increased intracranial pressure. The diagnosis in this case is hydrocephalomeningocele occipitalis inferioris. In the second case the tumor was situated over the base of the nose. The tumor, which extended into the skull cavity, could not be removed and was resected at the base. The child died three days after the operation. The growth was the result of incomplete separation of the corneal layer from the medullary tube. The consequence of the dystopy of the brain tissue was a defect in the cranial bones, and a deficient growth of glial tissue which untimately became replaced by connective tissue.

Placenta Accreta.—Polak has seen four cases of placenta accreta in thirty years. Hysterotomy followed by hysterectomy is the treatment of choice.

Papillary Tumors of Renal Pelvis.—Eight cases of papillary tumor of the renal pelvis are reviewed by Scholl. All were malignant. Three patients died from five to nine months after the operation. One had a transplant to the ureter, and another, a large secondary growth in the bladder A fourth patient died from uremia four years after a nephrectomy. During these four years, the patient had repeated multiple transplants which were treated by removing the ureter, by resecting the bladder and by extensive fulguration. Four patients are still alive; two are free from recurrence of transplantation of the growth; one, two and one-half years, and the other, four months after the removal of the diseased kidney and ureter. The remaining patients have had repeated transplants to the bladder, requiring persistent treatments; at the present time both are well; one, two years, the other, three years after the first operation.

Intracranial Hemorrhage in New-Born.—A study was undertaken by Sharpe and Maclaire to detect apparently signless intracranial hemorrhage in the new-born, with the result that routine lumbar puncture disclosed that intracranial hemorrhage of varying degree occurred in 13 per cent. of 100 consecutive deliveries within the first twenty-four or forty-eight hours after birth. Lumbar puncture is advocated as a safe routine procedure in suspected cases having the mildest signs of intracranial hemorrhage and cerebral edema within seventy-two hours after birth. Repeated spinal drainage by means of lumbar puncture at intervals of from six to twenty-four hours is advocated in cases of bloody spinal fluid under varying degrees of pressure. If repeated lumbar drainage fails to diminish progressively the blood concentration and the pressure of the cerebrospinal fluid, then a modified subtemporal decompression and cranial drainage is indicated.

Lymphaticostomy in Intestinal Obstruction.—Experiments were made by Costain with the intention of finding the path of absorption of the toxin in intestinal obstruction and how the toxin is formed. In all the fatal cases there was extensive necrosis and denudation of the mucous membrane; hence Costain concludes that toxemia in acute intestinal obstruction is due to the absorption of toxins formed from necrotic tissue. When in total occlusion the upper obstruction is just below the pancreatic ducts, there is a rapid necrosis of tissue above the obstruction, and death; but when the obstruction occurs above the ducts, just beyond the pylorus, even though more area is obstructed, the accessory gland digestive juices, and especially that from the pancreas, are neutralized lower down and necrosis and death are considerably delayed. The absorption of toxins is through the lymphatics to the thoracic duct.

Lymphaticostomy in Puerperal Infection.—Edwards reports a case of puerperal sepsis with general peritonitis, in which he opened the thoracic duct and drained after the method of Costain. The patient recovered.

Isolation of Submucosa in Intestinal Anastomosis.—Graham endeavors to show the part played by the submucosa in the development and performance of enterorrhaphy; to explain, by directing attention to its physical properties, certain measures that are taken, such as walling off infected areas with bowel, and to suggest further utilization of this membrane.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

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British Journal of Ophthalmology, London

8: 49-96 (Feb.) 1924

Essential Considerations in Regard to Field of Vision: Contraction or Depression? H. M. Traquair.—p. 49.
Buedinger's Modification of Diffenbach's Operation for Early Epithelioma of Lower Lid. R. E. Wright.—p. 58.

British Medical Journal, London

1: 179-222 (Feb. 2) 1924

*Contracted Pelvis. G. Fitzgibbon.—p. 179. (To be continued.)
Carcinoma of Colon. W. H. C. Romanis.—p. 183.
*Cutaneous Tuberculin Test. S. L. Cummins.—p. 186.
*Unilateral Diuresis. A. Fullerton.—p. 188.
*Resection of Ribs, Splenectomy and Suture of Stomach and Diaphragm: Recovery. L. W. Hefferman.—p. 189.
Effect of Thyroid and Ovarian Gland Extracts in Cases of Previous Miscarriage and Stillbirth. A. White.—p. 190.
Treatment of Paraphenylenediamine Dermatitis. A. W. Williams.—p. 191.
Fibrinous Bronchitis Resembling Tuberculosis of Lung. D. Ash and C. Brodribb.—p. 192.

Contracted Pelvis.—Among the 190 cases of contracted pelvis analyzed by Fitzgibbon there were thirty-three cases of symmetrically contracted pelves, sixty-nine cases transversely contracted or small round pelves; seventy cases of generally contracted flat pelves and eighteen cases of simple flat pelves.

Cutaneous Tuberculin Test.—The eighty cases investigated by Cummins, using the McNeil technic, included twenty-four advanced pulmonary and surgical cases, and fifty-six sanatorium cases, some pulmonary and some surgical. The severe cases, for the most part young phthisical women and "surgical" children, gave but a small percentage of "positives" with the more dilute tuberculin, though nearly all of them reacted to the concentrated doses. A considerable portion of patients with a more favorable type of disease, reacted with weak tuberculin. In the majority of cases the reactions were fading or had faded by the fifth day; a few persisted for several weeks. The number of cases showing a positive reaction is highest in every tuberculin concentration after forty-eight hours. Two patients that gave the feeblest reactions, both females with advanced pulmonary disease, died within three months of the tests. A man with advanced spinal disease as well as pulmonary tuberculosis, is at the end of three months from testing rapidly nearing his end. The patient that gave the strongest reaction—"double plus" with every dilution up to 2 per cent.—has greatly improved. Out of the eighty patients tested, a positive response, weak or strong, was noted with at least one "strength" of tuberculin on one or more of the days of observation in all but three cases—that is to say, in 96.2 of the total.

Unilateral Diuresis.—Fifty additional cases are advanced by Fullerton in further support of his theory that diminution of the specific gravity of the urine on the affected side is of

such frequent occurrence in certain disordered conditions of the kidney as to be of considerable assistance in diagnosis. A small irritating stone in the pelvis of the kidney may give rise to a unilateral diuresis so definite and striking as to impress even the most casual observer, affording strong confirmatory evidence of renal disturbance in the absence of such gross signs as pus or blood in the urine. In cases with little involvement of the parenchyma of the kidney, the picture closely resembles that of stone or early tubercle; namely, increased flow of urine of low specific gravity on the affected side. In cases of stone and pyelitis, on removal of the cause, the specific gravity and the flow soon became equal on the two sides. When the secreting structure of the kidney has been encroached on by disease or new growth, there is still a lowered specific gravity on the affected side, but the amount of urine secreted diminishes with the progressive involvement of the organ until most, or all, of the work is thrown on the sound kidney. This takes place in the later stages of calculus, tuberculosis, pyelonephritis, cystic kidney, hydronephrosis, pyonephrosis and new growth. In the condition known as symptomless renal hematuria or essential renal hematuria there is less likely to be a diminished specific gravity on the affected side on account of the absence of gross changes in the kidney. A difference in specific gravity on the two sides is, therefore, in favor of new growth rather than the less serious complaint.

Recovery from Severe Stab Wound.—Hefferman relates the case of a man who was stabbed and who was not seen until about five hours after the injury. At operation the stab was found to have severed the costocartilage of the eighth rib, opening the pleural cavity and passing through the left cupola of the diaphragm, which was incised vertically for about 3½ inches; the spleen was wounded, and a portion of it had been sliced off and was free in the abdominal cavity. There was considerable hemorrhage. While delivering the spleen, a tear in the omentum close to its attachment along the greater curvature of the stomach was noticed. An opening in the posterior wall of the stomach was found through which gastric contents escaped. Proper surgical repair was made. The patient recovered.

1: 223-260 (Feb. 9) 1924

Ocular Palsies. A. Feiling.—p. 223.
Contracted Pelvis. G. Fitzgibbon.—p. 226. (Concl'd.)
Diet During Insulin Treatment of Diabetes Mellitus. K. S. Hetzel.—p. 230.
*Blood Sugar in Epilepsy. I. DeB. Daly, J. Pryde and J. Walker.—p. 232.
Comparison of Various Forms of Colloidal Ferric Hydroxid. W. J. Pope and R. T. M. Haines.—p. 233.
Memory Sight. R. H. Elliot.—p. 235.
*Butyn as Local Anesthetic. St. C. Thomson.—p. 235.
Case of Rat-Bite Fever in England. G. C. Low.—p. 236.
Congenital Diaphragmatic Hernia. A. W. Tibbetts.—p. 236.
Absorption of Keloid. A. E. Somerford.—p. 236.

Blood Sugar in Epilepsy.—Daly et al. emphasize the fact that all calculations based on the assumption that dextrose is the only copper reducing and optically active substance present in the final polarimetric solution are fraught with danger. No conclusive evidence has yet been brought forward to show that dextrose is the only carbohydrate present in whole normal blood, apart from the question of the presence of α, β or γ forms or mixtures of these. The authors have found that the copper reducing value of the polarimetric solution obtained from dog's blood by the method of Winter and Smith exhibits irregular variations from day to day.

Butyn Not Satisfactory Anesthetic.—Thomson reports four cases in which butyn did not give satisfaction, in fact, untoward effects were encountered. He says that compared with cocain in laryngeal work butyn is slower in action, very much less effective, produces an irritating amount of secretion, and can evidently be extremely toxic. Whatever its use may be in the eye, ear, nose or pharynx, Thomson sees nothing but disadvantages and dangers in using it in laryngeal work.

Edinburgh Medical Journal

31: 65-124 (Feb.) 1924

Sippy Treatment of Peptic Ulcers. D. M. Lyon.—p. 65.
Hypopituitarism Associated with Glycosuria. H. J. C. Gibson.—p. 82.
*Fracture of Olecranon Treated by Temporary Pressure Paralysis of Musculospiral Nerve. G. Robertson.—p. 86.
*Congenital Defect of Thoracicocervical Spine. G. M. A. Herzfeld.—p. 90.
Periarterial Sympathectomy. W. Q. Wood.—p. 94.

Fracture of Olecranon.—To avoid using the usual mechanical means of retaining fractures, Robertson obtained a temporary paralysis of the muscles acting on the upper fragment by compressing the musculospiral nerve between forefinger and thumb above the origin of the nerve supply of the long head of the triceps for about ten minutes. The paralysis lasted six and one half weeks. It is asserted that healing of the bone was thus facilitated and that the alinement was perfect.

Congenital Defect of Thoracic Vertebra.—In the case reported by Herzfeld the first thoracic vertebral body was wedge shaped, the base of the wedge being toward the left; this portion carried the first rib, while the first rib was absent from the right side. There was irregular fusion of the transverse processes and, perhaps, of rudimentary cervical ribs on the right side of the neck involving the lower four cervical segments.

Indian Medical Record, Calcutta

43: 1-32 (Jan.) 1924

Uvulectomy: Substitute for Removal of Tonsils and Adenoids. A. E. Ewens, Atlantic City, N. J.—p. 1.
Protein Sensitization, Hypersensitization and Desensitization. A. Roy.—p. 4.
Dyspepsia: Treatment. J. Ganguli.—p. 7.
Intravenous Injection of Peptone in Epilepsy. D. M. Vasavada.—p. 14.
Pancreas and Insulin. S. K. Mukherji.—p. 15.

Journal of State Medicine, London

32: 51-100 (Feb.) 1924

Mode of Action of Bismuth Derivatives in Spirillosis and Trypanosomiasis. C. Levaditi.—p. 62.
Diet Deficiencies in Relation to Public Health. H. Scurfield.—p. 82.

Journal of Tropical Medicine and Hygiene, London

27: 25-36 (Feb. 1) 1924

Insect Bites and Stings. D. Walsh.—p. 25.
Treatment of Tetanus. W. G. Heath.—p. 26.

Lancet, London

1: 267-318 (Feb. 9) 1924

*Influence of Lead on Normal and Abnormal Cell-Growth. W. B. Bell.—p. 267.
*Leprosy; Self-Healing Disease. E. Muir.—p. 277.
Effect of Alteration of Temperature on Rate of Isolated Heart. W. M. Feldman and A. J. Clark.—p. 280.
*Acidosis in Relation to Acute Rickets. N. Burgess and A. A. Osman.—p. 281.
Backache. R. H. Paramore.—p. 283.
*Anatomic Abnormalities. G. Harrower.—p. 285.

Influence of Lead on Cell Growth.—Bell reports on laboratory investigations and clinical observations made on the effect of lead on tissue growth and especially in case of carcinoma and sarcoma. The method was employed only in utterly hopeless cases and the results were such as to encourage further study. Patients in good condition, in whom the growth is inoperable, whether it be primary or secondary, should have the opportunity of treatment. When the case is operable, the tumor should be removed and the patient treated immediately after operation to prevent recurrence. Serious radical operations with a large primary mortality—such as the extensive Wertheim operation for carcinoma of the cervix—may possibly be avoided if the patient can be treated after operation. Vaginal hysterectomy, for instance, even when the growth has not been entirely removed, has given encouraging results when intravenous injections of lead have subsequently been administered. The combined treatment, first with lead and subsequently with roentgen rays, should be tried for all inoperable but accessible growths. Possibly ionization, followed by applications of roentgen rays, may be advisable in certain cases. Bell concludes by saying: "It is almost certain that the ultimate mode of treatment in malignant disease will be by the blood stream."

Leprosy is Self-Healing.—Muir asserts that leprosy is a self-healing disease. Immunity is gradually produced in typical cases. Delay in immunity production is due to the nature of lepra bacilli which are able to multiply with few or no signs of local or general toxemia. During the first

two stages of leprosy it is most important to restore the lowered tissue resistance, otherwise the disease may pass on into the third stage. In the third stage, in which immunity has been produced, it is important to bring about moderate reactions so as to hasten the resolution of the lesions before deformity and disablement can take place. In cases which have passed through the third stage an absolute cure may be hoped for as far as the active disease is concerned; while in cases which have recovered without passing through the third stage, the cure can only be considered a relative one, recurrence being possible should the tissue resistance be seriously lowered at any future time.

Acidosis and Rickets.—Determinations of the plasma bicarbonate and acetone bodies in the blood and urine of three rickets patients were made by Burgess and Osman. In two out of the three cases no acetone bodies were present, while in the other case, although the plasma bicarbonate was still lower eleven days after the first observations were made, the ketosis disappeared after four days and did not reappear. So far the results would tend to show that there is a severe acidosis in acute rickets in which the acetone bodies play no part. This would lead to the conclusion that the acidosis is due to one or both of the following factors: (1) Loss of bases by some other channel, e. g., feces or urine; (2) some other acid bodies present in the blood.

Anatomic Abnormalities.—The cases reported by Harrower are: (1) a double urethra with double opening into the bladder, and a single external urethral orifice; (2) a persistent left posterior cardinal vein extending between left common iliac and left renal veins; (3) failure in descent of the cecum to the right iliac fossa after the rotation of the gut from the left iliac fossa to the right hypochondrium; (4) a small muscular belly or "middle head" of the gastrocnemius taking origin from the middle of the planum popliteum of the femur in both legs; (5) two bilateral and three unilateral specimens of the sternalis.

Medical Journal of Australia, Sydney

1: 29-52 (Jan. 12) 1924

Pyelitis. F. A. Gill.—p. 29.
Low Spinal Analgesia in Genito-Urinary Surgery: Combined Analgesia for Suprapubic Operations. R. J. Silverton.—p. 34.
Operation for Uterine Prolapse. F. A. Gill.—p. 37.
*Appendicitis: Unusual Early Symptoms. St. J. W. Dansey.—p. 39.

Appendicitis with Unusual Symptoms.—Dansey relates the case of a man who was suddenly taken ill with pain over the bladder and right groin and frequency of micturition with scalding. The next day there was swelling of the right testis with moisture at the urethral meatus. On the third day the man had a well developed right epididymitis. The urethral discharge was negative for the gonococcus. He recovered slowly. The abdomen had been entirely normal throughout this attack. Three weeks later he developed a left epididymitis but without disturbance of micturition or urethral discharge. The abdomen was normal until the seventh day when the man complained of pain in the right lower part of the abdomen. There was deep tenderness and a mass was felt per rectum rising upward toward the right side. The abdomen was opened: The pelvis was filled with coils of intestine glued together. A small abscess was opened in the culdesac. The tip of the appendix was adherent to the base of the bladder. It was phlegmonous in its distal half with a perforation at the tip.

1: 53-76 (Jan. 19) 1924

*Blood Pressure as Criterion of Safety in Anesthesia. G. Brown.—p. 53.
Causes of Depopulation Among Some Island Peoples. J. H. S. Jackson.—p. 58.
*Pathology of Malaria. T. S. Dixson.—p. 61.
*Case of Familial Cystic Kidney. J. Sprent.—p. 63.

Blood Pressure During Anesthesia.—If during an operation the systolic blood pressure falls to 80 mm. or less, and the pulse pressure to 20 mm. or less, with a pulse rate of 100, Brown terminates the operation as quickly as possible and restorative measures are employed. If this circulatory depression continues for more than twenty minutes, the patient will probably die within three days. Whenever possible the anesthetist should examine the patient fully a day or two before the operation.

Treatment of Malaria.—The method which Dixson has found successful in cases of chronic malaria is as follows: From 0.18 to 0.24 gm. doses of quinin hydrochlorid, in uncoated pill form, are given with from 90 to 120 c.c. of water, four times a day, for two months with 0.06 gm. calomel at night and a saline the next morning, for a week or two, then less often. The diet should not contain anything acid lest the calomel purge too freely.

Familial Cystic Kidney.—Sprent reports the case of a woman who had cystic disease of the kidney. Five members of her family were similarly afflicted, two others had some form of kidney disease.

South African Medical Record, Cape Town

22: 21-40 (Jan. 26) 1924

Periodontal Infections. J. Pratt-Johnson.—p. 23.
Case of Blackwater or Hemoglobinuric Fever. H. A. Spencer.—p. 28.
Case of Syphilis of Stomach. A. W. Falconer.—p. 32.

Tubercle, London

5: 201-256 (Feb.) 1924

*Relationship and Significance of Systemic Blood Pressure in Hemoptysis Due to Pulmonary Tuberculosis. P. S. Walker.—p. 201.
Annular Shadows in Pulmonary Tuberculosis. G. T. Hebert.—p. 212.
*Curious Case of Pulmonary Hemorrhage. B. Hudson.—p. 214.
Tuberculosis in England and Wales. G. J. Drolet.—p. 232.

Relation of Blood Pressure to Hemoptysis.—The blood pressure indices of fifty tuberculosis patients subject to hemoptysis were analyzed by Walker. In only seven of these cases is the systolic tension greater than normal, and in one of these seven the increase is small, being 2 mm. A significant feature of these hypertension cases is the association of such pathologic processes as arteriosclerosis, albuminuria and previous alcoholism. In five subjects there was no deviation from the normal systolic tension. In thirty-eight, there was a definite decrease in the systolic tension. In some cases of shock it was reduced to 90 mm. or less. This decrease appears to bear no relation to the amount of blood lost, and varies with all forms of hemorrhage. Comparing the systolic indices during the stage of hemoptysis with those obtained for the same subjects from two to three months later, it was noted that the fluctuations varied in their application. Second readings were obtained in forty cases. In twenty-two of these an increased systolic tension was observed, and of these, seventeen had no further hemorrhage. From these figures it may be deduced that hemoptysis is by no means invariably the result of heightened arterial tension. If it were, 86 per cent. of the patients ought not to have been the victims of hemorrhage. Evidence has been collected to show that the increase of toxemia, by what may be regarded as artificial methods, produces a change in the blood pressure readings similar to that characteristic of hemoptysis. The significance appears to be that the blood pressure is reduced and distorted by anything which increases the activity of the tuberculous focus. As a corollary, hemoptysis may be regarded as evidence of heightened activity of the lesion.

Unusual Pulmonary Hemorrhage.—A man, aged 41, said to have tuberculosis of the lungs, had had repeated attacks of hemoptysis, occurring, as a rule, at intervals of from ten to fourteen days. The patient's general condition was good, there was no fever and no sputum, and tubercle bacilli had never been found in the blood he spat up. On examination, the physical signs in the chest were practically nil. The roentgen ray showed a very deep hilum shadow on the right side. In spite of all care and treatment, the hemorrhages tended to be larger, and finally he had two really large ones, at an interval of a week. It was still impossible to tell with the stethoscope from which side the blood came, and apart from the anemia and feebleness, the patient seemed well. He had no fever or sputum, other than the blood, in which no tubercle bacilli could be discovered. However, after careful consideration it was decided to attempt an artificial pneumothorax on the side on which the hilum shadow was seen. This was done and there has been no further sign of blood or sputum, nor is there any fever, and the patient is feeling and looking well. Hudson favors a diagnosis of some lesion, other than tuberculosis, due to the after-effects of "gassing."

Annales de l'Institut Pasteur, Paris

38: 1-80 (Jan.) 1924

*Diphtheria Toxin and Anatoxin. G. Ramon.—p. 1.
Experimental Cholera. G. Sanarelli.—p. 11.
Virulence and Resisting Power. Nicolle and E. Césari.—p. 73.

Diphtheria Toxin and Anatoxin.—Ramon compared the flocculation of diphtheria toxin with antitoxic serum and its toxicity. Both properties were perfectly parallel during the first eight days of diphtheria bacillus cultures. Later, the toxicity diminished while the flocculating titer remained stationary. The reaction thus allows determination of the previous maximum toxicity, but not the actual amount of toxin present. On adding commercial formaldehyd (35 to 40 per cent.) in the concentration of 0.3 or 0.4 per cent. to the toxin, at a temperature of 40 to 42 C. he obtained a nontoxic product, which he calls anatoxin. Guinea-pigs showed no pathologic reaction after injection of 6 c.c. of this fluid prepared from a toxin lethal in 1/800 c.c. In spite of this, the flocculation and the immunizing properties were conserved. It was easy to immunize guinea-pigs with it, while it is practically impossible with toxin, and difficult with toxin-antitoxin mixtures. Horses injected with anatoxin produced as much antitoxin as those that had been injected with toxin. He injected 0.25 c.c. subcutaneously in himself without any local or general reaction except a transitory redness. He hopes that anatoxin will be useful in preventive treatment of diphtheria in children because of its harmlessness and efficiency.

Annales des Maladies Vénériennes, Paris

19: 1-80 (Jan.) 1924

*Diabetes and Syphilis. M. Villaret and P. Blum.—p. 1.
*Serologic Control of Syphilis. Oltramare.—p. 17.
Genital Herpes. G. Belgodère.—p. 32.
Punctated Condition of Labia Minora. R. Barthélemy.—p. 51.

Diabetes and Syphilis.—Villaret and Blum review the question of the syphilitic etiology of diabetes. Alimentary glycemia is common in syphilitics. Nervous disturbances resembling those of syphilitic origin are not rare in diabetics. Specific treatment of syphilis may ameliorate the diabetes in such patients.

Serologic Control of Syphilis.—Oltramare considers lumbar puncture superfluous in cases which were negative from the beginning of early treatment, as well as in those which were already seropositive, but in which the reaction decreased and never returned. Recurrence of a positive Wassermann reaction warrants lumbar puncture.

Archives des Maladies du Cœur, etc., Paris

17: 1-64 (Jan.) 1924

*Palpation of Enlarged Heart. L. Bard.—p. 1.
Pulsus Alternans of Bulbar Origin. G. Galli.—p. 14.
Ventricular Fibrillation in Adams-Stokes Syndrome. L. Gallavardin and A. Bérard.—p. 18.

Palpation in Diagnosis of Enlarged Heart.—Bard described in 1896 a particular heaving movement of the apex of the heart (choc en dôme) in aortic insufficiency. Another similar swift movement which is however localized over the middle cardiac region, occurs in nervous hyperkinetic hearts. A slower type of it is found in nephritic hypertrophy. The epigastric localized heaving indicates hypertrophy and dilatation of the right ventricle, of pulmonary origin. It is absent in stenosis of the pulmonary artery. The diffuse global heaving occupies the larger part of the precordial region. Its maximum is not localized; it seems as if its center might be anywhere, its periphery nowhere. It indicates a large diastolic dilatation, usually in total dilatation and hypertrophy of the heart.

Archives de Médecine des Enfants, Paris

27: 1-64 (Jan.) 1924

*Sequelae of Acute Encephalitis. J. Comby.—p. 1 and p. 43.
*Tetany and Alkalosis. E.-N. Zehnter and R. Foncin.—p. 11.
Calcium Metabolism and Phosphorus. Rohmer and Allimant.—p. 21.
Typhus in Children. V. Gillot, A. Mosca and C. Sarrouy.—p. 26.
Congenital Megacolon. P. Letondal.—p. 33.
Herpes Zoster of Inferior Maxillary Nerve. De Vaugiraud.—p. 41.

Sequelae of Acute Encephalitis.—Comby examined the outcome of acute encephalitis in children as observed in his seventy-six cases; 9 per cent. died. Recovery was complete in a little over 19 per cent. The rest suffered from epilepsy, great excitability, or psychoses, and especially from psychomotor disturbances.

Tetany and Alkalosis.—Zehnter and Foncin failed to find any indication of alkalosis in the urine of twelve infants with tetany. Sunlight or the quartz lamp had a curative effect without increasing the acidity of the urine. The low calcium content in the blood in this form of tetany remains to be explained.

Bulletin Médical, Paris

38: 183-202 (Feb. 16) 1924

*Tuberculous Glands. E. Sorrel.—p. 189.
Sciatica: Return of Achilles Reflex. F. Françon.—p. 192.

Treatment of Tuberculous Glands.—Sorrel recommends excision of enlarged, nonsuppurating tuberculous glands in the neck. Numerous suppurating glands with fistulas should be excised too. A single infected lymphoma may be punctured. Finally, agglomeration of diseased glands, with intense periadenitis, yields satisfactorily to roentgen-ray treatment.

Journal de Chirurgie, Paris

23: 1-112 (Jan.) 1924

*Stenosis of Duodenum or Pylorus of Gallstone Origin. F. Papin.—p. 1.
*Recurring Dislocation of the Shoulder. M. Oudard.—p. 13.

Stenosis of Pylorus or Duodenum of Gallstone Origin.—Papin refers to cases in which mechanical obstruction has entailed actual organic lesions for which there is no chance of retrogression. He compares a case personally observed with seven from the records.

Recurring Dislocation of the Shoulder.—Oudard interposes a bone graft between the base and the summit of the coracoid process, or slits the process and slides down one half to lengthen it about 3 cm., to correct permanently the tendency to dislocation.

Journal de Médecine de Bordeaux

101: 79-120 (Feb. 10) 1924

Prostheses for the Extremities. J. Gourdon.—p. 79.
*The Use of Forceps by the Midwife. F. de Coquet.—p. 105.

The Use of Forceps by Midwives?—Coquet emphasizes the necessity for legal prohibition of the use of forceps by midwives, except in extremely urgent cases, when the assistance of a physician is absolutely unattainable. In such a case the midwife should be obliged to send a detailed report on her justifiable interference to an officially appointed committee.

Nourrisson, Paris

12: 1-72 (Jan.) 1924

Acute Lymphatic Leukemia in Infants. Gautier and Thevenod.—p. 1.
*Tuberculin Tests. A. B. Marfan.—p. 9.
Epidemic Encephalitis in Infants. E. Apert.—p. 25.
*Congenital Affections of the Heart. Lemaire and Blechmann.—p. 29.

Tuberculin Reaction.—Marfan discusses the diagnostic significance of positive and negative cutaneous tuberculin reactions in small children.

Congenital Affections of the Heart.—Lemaire and Blechmann deal with the embryologic basis of congenital affections of the heart and the large vessels.

Paris Médical

97-128 (Feb. 2) 1924

*The Blood After Irradiation. A. Lacassagne and J. Lavedan.—p. 97.
*Radiotherapy in Infectious Diseases. G. Ceresole.—p. 103.
*Radiosensitization of Tissues. N. Samsonow.—p. 108.
*Radiotherapy of Hypertrophied Prostate. R. Ledoux-Lebard.—p. 115.
*Radiotherapy of Sarcoma. Régaud et al.—p. 119.

Modification of the Blood After Irradiation.—Lacassagne and Lavedan submitted rabbits and guinea-pigs to repeated roentgen-ray exposures. They found considerable diminution of leukocytes, of lymphocytes and of blood platelets, but an almost unchanged number of large mononuclears and erythrocytes. They ascribe the leukopenia to necrobiosis in the leukopoietic organs, which are much more vulnerable for the

rays than the leukocytes themselves. On the fourth day or so, regeneration begins, with consecutive hyperleukocytosis.

Radiotherapy in Infectious Diseases. — Ceresole extols roentgen-ray treatment in the infectious diseases with leukopenia, such as malaria and typhoid, for the purpose of stimulating the hematopoietic organs. For this end, minimal doses should be used. Also, in initial stages of pulmonary tuberculosis and in the forms of slow development, tending to sclerosis, this treatment has proved efficient. The treatment is rational not only on account of the serologic defense afforded by the blood corpuscles, but also on account of the encouraging effects reported by various experimenters.

Artificial Radiosensitization of Tissues. — Samssonow describes experiments in which the sensibility of tuberculous and cancerous tissues was increased by artificial introduction of heavy metal salts, known to facilitate electric action. He hopes that proper devices will be found to utilize fully the chemical effects of the roentgen rays. He also quotes experiments of Halberstaedter, Goldstücker and Ghilarducci on trypanosomes, prodigiosus and pyocyaneus bacilli. It has been inferred that the specific action on the cells is due to the beta rays.

Radiotherapy of Enlargement of the Prostate.—Ledoux-Lebard recommends penetrating roentgen-ray therapy for treating hypertrophy of the prostate. In one case pollakiuria, dysuria, perineal pains and slight incontinence were essentially relieved after five exposures, and this result was confirmed by eight following sittings, and has proved permanent during the three years since, with annual repetition of the course. There is no contraindication for such treatment, but it may be inefficacious if chronic infection of the urinary passages has already caused profound changes in the muscular tissue of the prostate.

Radiotherapy of Sarcoma.—Régaud and his co-workers review the experiences at the Paris Radium Institute, 1919 to 1922, a total of sixty-two cases. Sixteen of the patients were in apparently good health at the beginning of 1923.

129-144 (Feb. 9) 1924

*Allergy to Tuberculin. F. Bezançon and A. Philibert.—p. 129.
*Motor Functioning of the Stomach in Neuropaths. L. Timbal.—p. 137.

Tuberculin Allergy and the Problem of the Tuberculous Constitution.—Bezançon and Philibert discuss the two main factors of tuberculosis: the hereditary, that is, the properly constitutional, and the external, that is, infection. It is known that infants and primitive races who have never suffered from the infection develop the disease in a fatal form when they become infected, while city children subject to repeated successive "minimal contaminations," very rarely develop miliary or caseous forms. This condition of different reaction, known as allergy, affording insensibility, protects the infected organism against the specific virus. But this allergy is prone to fail at any accidental traumatism, unsuitable nourishment or following other weakening causes. The idea of the tuberculous soil might be defined as the internal predisposition composed of heredity, species, race, age, sex and the environment, with the exception of the infecting agent. Koch's phenomenon does not prove at all any immunizing influence from tuberculin injections, because it permits the fatal development of the primary infection notwithstanding that there is an allergic reaction to reinfection. Therefore the authors conclude that the present prevailing treatment with tuberculin is based on very confused theories, and that greater benefit can be realized by prophylactic, proper nutritional and general hygienic means.

Gastric Hypertonia and Hyperkinesia of Neuropathic Origin.—Timbal says that a general neuropathic diathesis, aerophagy, modifications of the normal gastric motility, malaise, griping pains and vomiting after meals, with unpleasant sensation of pressure and tension, are the main features of the disease dealt with. The patients are young men rather than women, all being neuropaths. Radiologically, the stomach proves to assume a more horizontal position, and its shape resembles somewhat a cow's horn. Localized spasms at the pylorus or cardia are also demonstrable. Careful differentiation from ulcer should be made. Among his thirty-six cases there was only one with hyperchlorhydria and two others with both hypochlorhydria and hypacidity, these latter with positive Wassermann. Causes of the trouble, besides the predisposing factors, are found in traumatism, weakening after other diseases, but especially overexcitability of the vegetative nervous system. Therapy consists in quieting the pneumogastric nerve and the solar plexus with camphor, bromin, opiates, hyoscyamus, cocain or codein; hydrotherapy also is advocated. Syphilitics were given specific medication, after which their gastric anomalies ceased.

Presse Médicale, Paris

32: 113-120 (Feb. 6) 1924

Test Diuresis. H. Vaquez and J. Cottet.—p. 113.
*Albuminuric Retinitis. H. Chabanier et al.—p. 113.
Transcalcaneus Access to Fractured Instep. Blanchard.—p. 116.

Albuminuric Retinitis.—Chabanier, Lobo-Onell and Besnard observed twenty-one patients with typical albuminuric retinitis. Ten of them had a normal amount of urea in the blood. It is known that about one half of azotemic patients die without retinitis. Therefore they deny a causal connection between the retinitis and the insufficiency of the kidneys, but they emphasize the bad prognostic significance of the retinitis. The two conditions are rather parallel phenomena, similar to the hypertension, which is also independent of kidney insufficiency. They believe that Bright's disease is not essentially an affection of the kidneys. They assume that the main changes are in the blood plasma. Hypercholesterolemia, according to their conception, seems to be one of the main features.

32: 121-132 (Feb. 9) 1924

*Ascites and Jaundice in Cirrhosis of the Liver. N. Fiessinger and P. Brodin.—p. 121.
*Localization of Spinal Tumors. C. Vincent.—p. 123.
Pulmonary Tuberculosis and Insulin. L. Cheinisse.—p. 126.

Ascites and Jaundice in Cirrhosis of the Liver.—Fiessinger and Brodin investigated the pathogenesis of the sudden jaundice and rapidly developing ascites which occurs sometimes in cases of cirrhosis of the liver. The stools are more or less clay colored. Necropsy reveals a comparatively large atrophic liver with a recent fatty degeneration. This acute degeneration would be without mechanical effect in a normal liver, which could expand freely. In these stiff sclerotic livers, it causes compression of bile ducts and of portal capillaries, with resulting jaundice and ascites. The spleen tumor is sometimes evidently recent. The degeneration may be provoked by general anesthesia, by infections and by unknown causes. The condition is grave. Hepatic organotherapy is indicated. Intravenous injections of mercury salts may induce diuresis in the less severe cases.

Localization of Spinal Tumors.—Vincent emphasizes the necessity of good clinical observation in the diagnosis of tumors of the spinal canal. Roentgenography after injections of an iodin emulsion—valuable as this is—gave several misleading directions. If laminectomy were an innocuous operation, this would not be very serious. Yet more patients die than recover after it. Abnormally high albumin content of the cerebrospinal fluid, and dissociation of perception of touch, pain and especially of heat and cold, are among the first clinical signs, which must not be neglected. Typical radicular pains, especially in the upper extremities, are valuable. One has to be very cautious in utilizing pains of the lower extremities in topical diagnosis. They may be due to an irritation of the tracts in the spinal cord, very high above the root of the nerves. He observed a case presenting diffuse tenderness and contracture of the spine.

Progrès Médical, Paris

77-100 (Feb. 9) 1924

*Rectal Palpation in Gynecology. F. Daels.—p. 77.
*Scleroderma and Syphilis. Lortat-Jacob and Legrain.—p. 79.
*Pathologic Anatomy of the Sympathetic. Laignel-Lavastine.—p. 81.
*Syringomyelia. C. Achard.—p. 83.
*Tuberculous Softening of the Spinal Cord. G. Roussy and L. Cornil.—p. 93.

Rectal Palpation in Gynecology.—Daels advocates rectal instead of vaginal palpation for diagnostic purposes. He asserts the greater efficiency of the former in retroflexion, in the diagnosis of ovarian cysts, and especially in the first stage of labor, since it relieves the physician of the very particular

disinfection he has to perform for examining through the vagina.

Scleroderma and Syphilis.—Lortat-Jacob and Legrain direct attention to the fact that syphilis, as one factor among others, has not been given due consideration in the etiology of sclerodactylia and generalized scleroderma. They saw very good results from specific treatment with mercury and arsenicals.

Pathologic Anatomy of the Sympathetic.—Laignel-Lavastine has been studying the pathologic changes of the sympathetic system in different mental diseases. In melancholia, dementia praecox, imbecility, hallucinatory and confusional states he found profound affections of the sympathetic cells and neurofibrils, such as sclerosis and several forms of degeneration. In mania, no abnormal histologic findings could be discovered.

Syringomyelia.—Achard criticizes the various theories advanced to explain syringomyelia. Guillain ascribes the cavity formation in the spinal cord to a preceding infectious process, ascending from the hand on a neural pathway. The treatment is merely symptomatic, protective, and preventive in view of the analgesia, with eventually surgical treatment if complications arise. A new achievement is radiotherapy, which has given in a number of cases very good results by arresting the further morbid evolution.

Tuberculous Softening of the Spinal Cord.—Roussy and Cornil report a very interesting case of a Senegal soldier who died amid symptoms of meningomyelitis. Among the main clinical features were those indicating total block of the spinal cord. Necropsy revealed absolutely intact vertebrae. The positive Wassermann reaction does not prove necessarily concurrence of syphilis, since the patient, being a Senegalese, very probably had yaws, which is known to react positively to the Wassermann test.

Revue Française d'Endocrinologie, Paris

1: 441-520 (Dec.) 1923

The Heart in Exophthalmic Goiter. C. Oddo.—p. 441.
Metabolism in Endocrine Disturbances. Hermann and Richard.—p. 455.
*Suprarenal Virilism in Hen. O. Berner.—p. 474.

Suprarenal Virilism in Hen.—Berner describes a white Leghorn hen which developed male characters. A malignant tumor was found in one suprarenal capsule.

Schweizerische medizinische Wochenschrift, Basel

54: 165-184 (Feb. 14) 1924

Extirpation of the Rectum. H. Brun.—p. 165.
*Treatment of General Paralysis. Franck.—p. 168.
Emulsions in Therapeutics. M. Hartmann.—p. 170.
Psychologic Etiology of a Duodenal Ulcer. M. E. Bircher.—p. 173.
First Record of Syphilis in Switzerland. A. Martin.—p. 178.

Specific and Nonspecific Treatment of General Paralysis.—Franck reviews the clinical experiments made for testing nonspecific, fever-exciting methods in treatment of general paralysis. Wagner endorses the theory that a "hemato-encephalic barrier," preventing the passage of therapeutic agents from the blood into the brain, is weakened by acute infectious diseases, but it is made more impermeable by arsenical, alcohol or morphin intoxication. It seems that the species of spirochete invading the central nervous system also confers on it increased resistance against therapeutic action. But after nonspecific fever-inducing treatment, the chances are better for attacking the spirochete.

Pediatria, Naples

32: 121-184 (Feb. 1) 1924

*Histology of Infantile Scurvy. A. Dalla Valle.—p. 121.
Micro-Organism of Scarlet Fever in Bone Marrow. F. Riccardi.—p. 148.
*Cerebrospinal Fluid in Nutritional Disturbances. A. de Capite.—p. 151.
Ether in Treatment of Whooping-Cough. M. Macciotta.—p. 159.
Herpes Zoster and Varicella. R. Vaglio.—p. 172.
Protracted Infantile Leishmaniasis. G. Castorina.—p. 174.

Histology of Infantile Scurvy.—Dalla Valle publishes the necropsy findings in two cases of Barlow's disease. The essential change is in the connective tissue of the bone marrow and the periosteum. The bone alterations are secondary.

Cerebrospinal Fluid in Nutritional Disturbances.—Capite titrated the cerebrospinal fluid of infants, using alizarin as indicator (Rohonyi's method). He found a low alkalinity in toxicosis, and normal values in dystrophia and decomposition. The alkalinity was in inverse proportion to the glucose concentration of the cerebrospinal fluid.

Policlinico, Rome

31: 143-176 (Feb. 4) 1924

*Work in Pulmonary Tuberculosis. A. Borgherini-Scarabellin.—p. 14
Bayonet Wound of the Midbrain. G. Piccoli.—p. 153.

Work in Pulmonary Tuberculosis.—Borgherini-Scarabellin was favorably impressed with the effects of work in the treatment of well selected and observed patients with apyretic torpid forms of pulmonary tuberculosis.

31: 65-124 (Feb. 1) 1924. Medical Section

*Auto-Agglutination of Erythrocytes. P. Mino.—p. 65.
*Artificial Changes in Blood Grouping. A. Esposito.—p. 89.
Agglomeration of Erythrocytes in the Cold. E. Debenedetti.—p. 95.
Sedimentation Test in Tuberculosis. C. Verdina.—p. 105.
*Digestive Leukopenia in Infants. Ronchi and Sabatini.—p. 118.

Auto-Agglutination of Erythrocytes.—Mino found that auto-agglutination of erythrocytes is usually only simulated by an increased tendency to pile up in rouleaux. This phenomenon has no special pathologic significance, and is observed in all conditions with increased sedimentation speed. The serum may be diluted fourfold and still produce this pseudo-auto-agglutination. He observed a real auto-agglutination in blood from a case of paroxysmal hemoglobinuria, after cooling and warming up the blood.

Artificial Changes in Blood Grouping.—Esposito confirms that the alleged changes of blood groups by different pharmacologic and physical agents are due only to changes of agglomeration.

Digestive Leukocytosis and Leukopenia in Infants.—Ronchi and Sabatini found in infants a leukocytosis in ten to fifteen minutes after a meal (including breast feeding). This phase was followed by a leukopenia and new leukocytosis. The leukopenia is stronger in dyspepsia. They found thermolabile leukolysins in the serum during the leukopenia phase.

Riforma Medica, Naples

40: 97-120 (Feb. 4) 1924

*Side-to-Side Entero-Anastomosis. E. Santoro.—p. 97.
*Isolysin Groups. P. Mino.—p. 101.
Foreign Bodies in Sex Organs. F. Viola.—p. 103.
Cyst of Round Ligament. A. Marta.—p. 104.
Signs of Activity of Tuberculosis. P. de Michele.—p. 106.

Side-to-Side Entero-Anastomosis.—Santoro reports experimental results of "aseptic" side-to-side entero-anastomosis. He uses silk threads for putting the two walls of the intestine into a snare to produce a communication after the strangulated portion of the walls has sloughed off.

Isolysin Groups.—Mino found a practically perfect parallelism between the isolysin and the iso-agglutinin groups in human blood grouping.

Rinascenza Medica, Naples

1: 73-96 (Feb. 15) 1924

Present Status of Diagnosis and Treatment of Cancer. G. Santoro.—p. 73.
Malaria Treatment of Progressive Paralysis. A. Pilcz.—p. 77.
Granuloma of Dental Origin. B. de Vecchis.—p. 79.
*Latent Tuberculosis. P. de Michele.—p. 81.
Apparatus for Artificial Pneumothorax. G. Cicconardi.—p. 83.

The "Rinascenza Medica."—This new journal for biologic medicine has been founded by Prof. C. Martelli of Naples, with a large staff that includes de Vecchi and Sturchio of New York, Caronia, Di Cristina, Jemma and other professors in most of the Italian universities, and some in Paris. It is to appear twice a month. The articles are followed by summaries in four languages.

Diagnosis of Latent Tuberculosis.—De Michele is convinced that many cases of rebellious asthma, glandular disease, rheumatism, fetid bronchitis and similar tenacious affections are in reality the work of unrecognized tuberculosis. The toxemia from the latent infection maintains the morbid condition even if not primarily responsible for it. He describes six cases to illustrate the advantage in such conditions of specific serotherapy. Under the specific antiserum, hysteric convulsions, keloids, sclerodermia, obsessions or chorea subsided.

Deutsche medizinische Wochenschrift, Berlin

50: 163-194 (Feb. 8) 1924

*Action of Vitamins. W. R. Hess.—p. 163.
Microdetermination of Ph. E. Bresslau.—p. 164.
*Spirochaeta Pallida in Female Urethra. K. Trost.—p. 166.
*Etiology and Treatment of Chorea. A. Salomon.—p. 166.
Paratyphoid Colitis in Infants. H. Lehfeldt.—p. 169.
"Open" and "Closed" Tuberculosis. W. Schemenski.—p. 170.
Roentgen-Ray Treatment of Pulmonary Tuberculosis. H. Schulte-Tigges. —p. 171.
Complications of Spontaneous Pneumothorax. E. Körner.—p. 173.
Recurrence of Ileus from Gallstones. E. Wohlauer.—p. 174.
Caseation of Glands After Ponndorf Vaccination. Schürmann.—p. 174.
*Mites in Human Feces. H. Westphalen.—p. 175.
Phlebosclerosis. A. Bieger.—p. 176.
Treatment of Wounds. IV. Fessler.—p. 177.
Gastro-Intestinal Affections. V. H. Citron.—p. 180.
Phosphorus and Cod Liver Oil in Asthma. Neter.—p. 181.
Mortality of Adolescents. E. Roesle.—p. 182.
Austrian Regulations on Physicians. L. Ebermayer.—p. 182.
R. Koch's Diary.—p. 184. Cont'd.

Action of Vitamins.—Hess points to the almost perfect analogy between experimental beriberi and a subacute poisoning with hydrocyanic acid. The toxic action from each may enhance that of the other. The clinical symptoms are alike. The venous blood contains an abnormally high amount of oxygen. The same circumstances (increase of metabolism) make both conditions more apparent. The action consists in the inhibition of oxidation of intermediary products (chiefly lactic acid). The first phase of the disassimilation of carbohydrates is not disturbed—just as Meyerhof demonstrated in the action of hydrocyanic acid on muscles. Therefore, there is no primary impossibility of energy production, but only of quick recuperation. This disharmony of the phases of catabolic change is the essence of disease from a deficiency of vitamin B.

Spirochaeta Pallida in Female Urethra.—Trost found spirochetes in the female urethra comparatively frequently in primary syphilis (including a chancre of the tonsil). They were rare in the secondary stage.

Etiology and Treatment of Chorea.—Salomon recommends Passini's lumbar puncture in severe cases of chorea. The amount of fluid withdrawn should not be too small. Since the pressure is usually increased, it is easy to obtain 20 to 40 c.c. of the fluid.

Mites in Human Feces.—Westphalen found mites (probably *Tyroglyphus farinae*) in the fermentative and normal feces of persons who had eaten a certain flour. He does not believe in their pathogenic action.

Klinische Wochenschrift, Berlin

3: 257-304 (Feb. 12) 1924

Deep Antisepsis of Wounds. C. Brunner.—p. 257.
*Theory of Insulin Action. W. Laufberger.—p. 264.
*Avitaminosis and Endocrine Deficiency. E. Abderhalden.—p. 267.
*Arc of Cornea in Young Adults. E. Joël.—p. 269.
Treatment of Hypertension. S. Rusznyák.—p. 272.
*Diagnostic Puncture of the Spleen. G. von Nagy.—p. 274.
*Prognosis of Hodgkin's Disease. F. Klewitz and G. Lullies.—p. 276.
Sedimentation Test in Polycythemia. J. Vorschütz.—p. 276.
Counting the Blood Platelets. H. Müller.—p. 277.
Volatility of Bacteriophage. Olsen and Yasaki.—p. 278. Reply. Gildemeister and Herzberg.—p. 278.
Volatility of Bacteriophage. W. Borchardt.—p. 278. Reply. Olsen and Yasaki.—p. 279.
*Diuretic Action of Thyroxin. F. Hildebrandt.—p. 279.
Roentgen-Ray Pictures of Blood Vessels. P. Esau.—p. 280.
*Insulin and Sugar Production. B. v. Issekutz.—p. 280.
Scopolamin Poisoning in Therapeutic Doses. P. Hilpert.—p. 280.
Function Test of Bowel. Van der Reis.—p. 282.
Energy Metabolism of Infants. H. Behrendt.—p. 285.

Theory of Insulin Action.—Laufberger found in rabbits no increase in other nonprotein carbohydrates of the serum during insulin hypoglycemia. He agrees with Geelmuyden's theory so far as it assumes an inhibition of carbohydrate production by insulin. He considers the second part of the theory (production of fat from carbohydrates) as perfectly superfluous. The whole amount of glycogen present in the rabbit should be theoretically destroyed by the normal metabolism in two or three hours. This is exactly the time when the toxic effects of large doses of insulin appear. He was not able to accelerate death in rats by using hundredfold lethal doses. The whole action of insulin consists in the inhibition of the normal production of carbohydrates from fat, which is the real reserve material. When the comparatively insignificant amounts of glycogen and glucose are burnt up, the intoxication sets in. We do not need to assume any increased speed of oxidation of carbohydrates. He believes in the glucose overproduction theory of diabetes. The absence of glycogen in the liver of pancreatectomized animals is not surprising. He finds that there is no reason why the organism should produce a temporary reserve of carbohydrates when there is plenty of sugar circulating.

Avitaminosis and Endocrine Deficiency.—Abderhalden discusses one possibility of failure of vitamin and endocrine treatment. It is frequently observed that vitamin preparations which are active in enhancing the growth of animals fail in children. Not only the presence of such substances, but also the condition of the receptive organs decides in regard to their action.

Arc of Cornea in Young Adults.—Joël found regularly a hypercholesterolemia in comparatively young adults with senile arc of the cornea.

Diagnostic Puncture of the Spleen.—Von Nagy believes that the majority of fatal accidents in punctures of the spleen are due to an overlooked respiratory reflex: The diaphragm contracts when the peritoneum is pierced. Therefore he makes the puncture in the deepest inspiration position, thrusts the needle at first only into the muscles, and makes the puncture of the spleen after the patient has overcome the shock, and made about two inspirations.

Prognosis of Hodgkin's Disease.—Klewitz and Lullies' sixteen patients with Hodgkin's disease who had been treated with roentgen rays, lived on an average twenty months after the beginning of the disease. Thus it seems that the treatment did not prolong the life. Only one of them survived for six years.

Diuretic Action of Thyroxin.—Hildebrandt found a marked hydremia (increase of 40 per cent.) in the sixth hour after thyroxin injections. The diuresis of water and salt was greatest in the third to sixth hour.

Insulin and Sugar Production.—Issekutz found that insulin requires a day to develop its inhibiting action on sugar production in the frog liver.

Medizinische Klinik, Berlin

20: 169-200 (Feb. 10) 1924

*The So-Called Puberty Gland. W. Benthin.—p. 169.
Chronic Affections of Joints. F. Munk.—p. 171. Cont'n.
Recurrences After Appendicitic Abscesses. K. Reschke.—p. 174.
*Urinary Disturbances in Meningitis. E. Czyhlarz and E. Pick.—p. 176.
*Scopolamin Addiction. G. Schaltenbrand.—p. 176.
*Blood Pressure in Prognosis and Treatment. K. Fahrenkamp.—p. 179.
Bismuth in Syphilis. Leissner and Reichenbächer.—p. 182.
Tuberculin Ointments. H. Moro.—p. 183.
Treatment of Furuncles. F. Koch.—p. 183.
"Thyroidin Treatment." H. Curschmann.—p. 184.
Volatility of Bacteriophage. W. Spät.—p. 184.
Roentgen Treatment of Mouse Cancer. E. Opitz.—p. 185.
Practical Gynecology. E. Runge.—p. 185. Cont'n.
Psychotherapy and Sex Science. W. Stekel.—p. 187.

The So-Called Puberty Gland.—Benthin sees no reason to attribute to the interstitial cells of the ovary any marked endocrine function. The formation and preservation of female sex characters and the sexual life depend largely on ovarian functioning, but it is the follicle apparatus which accounts for it.

Urinary Disturbances in Meningitis.—Czyhlarz and Pick report the histories of three adults who died from tuberculous meningitis. Retention of urine was the first sign in all of them.

Scopolamin Addiction.—Schaltenbrand observed after discontinuing scopolamin a rapid deterioration in the condition of patients with postencephalitic parkinsonism. It is probable that this was due to an acquired drug habit. He did not observe it in normal subjects.

Blood Pressure in Prognosis and Treatment.—Fahrenkamp measures the blood pressure twice daily, in patients with hypertension. A continually high pressure speaks for malignant sclerosis of the kidneys, and is of course prognostically unfavorable.

Wiener klinische Wochenschrift, Vienna

37: 131-154 (Feb. 7) 1924

Pathology of Otosclerosis. O. Mayer.—p. 131.
*Malaria Treatment of General Paralysis. E. Redlich.—p. 134.
*Intracutaneous Test for Syphilis. A. Gutmann and A. Kropatsch.—p. 138.
*Salts and Bacteriophages. E. Zdansky.—p. 141.
*Nitrite Reaction in Urine. W. Loewenstein.—p. 142.
Medicine and Hygiene in South America. IV. R. Kraus.—p. 143.

Relation Between Masked Malaria, General Paralysis and Epilepsy.—Redlich recalls that in many cases of incipient general paralysis, it has shown marked remissions after an artificial tertian malaria had been induced, the fever attacks of which could be easily checked by administration of quinin and arsphenamin. But, in a number of cases, various symptoms arose, such as delirium, stupor, trigeminal neuralgia, spinal paraplegia, and epilepsy. In many cases (almost all ex-soldiers), epilepsy has been observed after malaria. These facts suggest that the mentioned symptoms are but the expression of a masked tertian. Attempts have been made to explain their development from cerebral "granulomatosis," neuronophagy, gliosis, and especially from hematogenous embolism, due to plasmodial action.

Intracutaneous Horse Serum and Gelatin Test in Syphilis.—Gutmann and Kropatsch explain that it has been claimed that intracutaneous administration of a gelatin solution or horse serum, respectively, induces a reaction characteristic of latent syphilis. This is not exactly true, since it is established that, on one hand, only 20 per cent. of all syphilitic cases respond positively, while, on the other hand, nonspecific dermatoses respond to it, too, in about 4 per cent. of the sum total. They hold that the gelatin causes an allergic reaction in the local tissues. It decreases capillary permeability and, consequently, diminishes the injected tissue's readiness for inflammatory processes.

The Import of Salts to Bacteriophages.—Zdansky describes his experiments to test whether or not transmissible lysins need necessarily an electrolytic culture medium. He found that while in distilled water the lysins perish in a comparatively short time, they persist and even thrive with great tenacity among environmental conditions of even extremely dilute salt solutions plus bouillon. The free cations, especially the potassium ion, proved to be essential. He explains by this circumstance the considerable lysin conserving quality of Rhine river water.

The Nitrite Reaction in the Urine.—Loewenstein discusses a practical device of considerable differential diagnostic value. To a test tube almost filled with urine, the Griesz-Ilosvay alpha-naphthylamin reagent is added. If the urine changes to a cherry hue, that is, if the reaction be positive, it proves the presence of nitrite-producing micro-organisms, such as staphylococci, colon bacilli, proteus, aerogenes lactis and others. But gonococci, tubercle bacilli, and streptococci are not nitrite producers. These latter may even hinder the development of a positive reaction in the case of a mixed infection. In gonorrhea, staphylococci may play the rôle of a stimulant, while the gonococci behave as a handicap concerning the positive reaction. Obviously, if after repeated examinations the alpha-naphthylamin reaction veers to positive and remains permanently so, we may infer that the gonorrhea has passed, and that the pus being discharged is merely of staphylococcic origin. This conclusion proved to be very reliable in all cases investigated.

Zeitschrift für Kinderheilkunde, Berlin

37: 1-166, 1924

*Concentrated Albumin in Infant Feeding. M. Eckert.—p. 1.
*The Heart After Scarlet Fever and Diphtheria. A. F. Hecht.—p. 5.
*Differentiation of Enuresis Types. C. Pototzky.—p. 12.
*Types of Neuropathic Diathesis. C. Pototzky.—p. 24.
*Environment and Growth. R. Degkwitz et al.—p. 27.
*Calorimetry in Cretinism. F. Talbot et al.—p. 98.
*Etiology of Rickets. H. Beumer.—p. 105.
Health in Schoolchildren. E. Aschenheim.—p. 109.
Little Girl with Adiposis, Gigantism, Polycythemia and Eosinophilia. W. Stoye.—p. 119.
*Environmental Types of Preadolescence. J. K. Friedjung.—p. 125.
*The Hemogram in Young Children. C. Frankenstein and Stecher.—p. 145.
*Whooping Cough and Tuberculosis. Koenigsberger and Fuerst.—p. 159.
"Ether Treatment of Whooping Cough." H. Levinger.—p. 163.
Pyuria in Infants. W. Lasch and A. Dingmann.—p. 164.

Concentrated Albumin in Infant Feeding.—Pirquet holds that the albumin concentration should be kept between 10 and 20 per cent. of the infant's food. But obviously two further important factors exist, namely, the percentage of water and the absolute amount of food ingested. Eckert reports that albumin concentrations higher than this proved to endanger digestion in the eight healthy infants tested, and caused marked decrease in weight.

The Heart After Scarlet Fever and Diphtheria.—Hecht's observation proves the prognosis for slight cardiopathies to be much better after scarlet fever than after diphtheria. The heart was found clinically sound years later in 66 per cent. of the scarlatinal, but only in 22.3 per cent. of the diphtheria cardiopaths.

Differentiation of Types of Enuresis.—Pototzky classifies enuresis in three types: the hyperexcitable or neuropathic; the hypobulic or psychopathic, and the intellectually and emotionally moron type. This differentiation is important because it affords directions for prognosis and treatment. While the first type has to be managed with sedatives, or, in case of abnormal depth of sleep, with camphor, the second type can be approached best by proper suggestive therapy. The treatment of the third type is mainly endocrine and educational.

Types of Neuropathic Diathesis.—Pototzky criticizes the newer classifications of seven reaction types. He concludes that, to avoid confusion, it is best to maintain the three great differential syndromes, namely, neuropathies, psychopathies and hysteria.

Environment and Growth.—Degkwitz and his fourteen co-workers made a very thorough biochemical investigation relative to the influence of light and the quality of food fats ingested. They found that young animals thrived as well in the dark as in light, provided that their organs were of sound function. But metabolism is different in "dark-room animals" compared with others; they invariably weighed more. Low-grade fats in combination with large amounts of albumin promoted in the highest degree skeleton growth. The least growth was observed as the result of low-grade fat plus plenty of carbohydrates. Deprivation of light caused essential changes in metabolic rate and ash residue. These data compared with those known from the biochemistry of rachitis, show a conspicuous resemblance.

The Value of Basal Metabolism in the Diagnosis and Treatment of Cretinism.—Talbot, Sollgruber and Hendry emphasize the essential importance of early detecting feeblemindedness, because only thus will it be possible to start systematic thyroid treatment in time. Since mental symptoms cannot be available in infancy, colorimetric tests are recommended. They proved practical and efficient. This is the seventh publication on the research in this line under Talbot's direction at Boston.

Rickets and the Substances Which Resist Saponification.—Beumer discusses a new theory of rickets, according to which rickets is due to a deficiency in certain substances which resist saponification, but are necessary for normal metabolism and growth.

Environmental Types of Young Neuropathic Children.—Friedjung discusses the "only" child, the unloved child, and the child disturbed by parental quarrels or jealousy of his sisters and brothers. Careful study of these environmental conditions is indispensable to lead the neuropathic child toward a better adjusted mental life.

The Hemogram in Young Children.—Frankenstein and Stecher present evidence that the microscopic blood pictures of the prematurely born, of full term infants and of adults are easy to be differentiated by the cell count and by a typical shifting of the neutrophils. They extol the value of the hemogram in both diagnosis and prognosis in young children.

Whooping Cough and Tuberculosis.—Koenigsberger and Fuerst claim that whooping cough promotes the development of tuberculosis, but in a lesser degree than measles does.

Zeitschrift für Urologie, Leipzig

18: 1-64, 1924

*Ambard's Coefficient. W. Nyiri, K. Presser and A. Weintraub.—p. 1.
Vaccine Treatment of Gonorrhea. V. I. Marsellos.—p. 46.

Ambard's Coefficient.—Nyiri, Presser and Weintraub determined Ambard's ureosecretory coefficient in one hundred subjects. They found limits of errors amounting to 0.02. Only figures over 0.15 are decisive signs of an affection of the kidneys. Nevertheless they found the test valuable.

Zentralblatt für Chirurgie, Leipzig

51: 125-168 (Jan. 26) 1924

*Adhesions Between Gallbladder and Duodenum. Schneider.—p. 125.
*Treatment of Bone Curvatures. C. R. H. Rabl.—p. 131.
Death from Hemorrhage After Gastro-Enterostomy. Metge.—p. 132.
*Healing of Esophageal Diverticulum. E. K. Frey.—p. 134.
Simple Jejunal Ulcer. H. Velte.—p. 135.
The Incision in Bilateral Inguinal Hernia. Tillmann.—p. 137.
*Copper Sulphate for Tuberculous Fistulas. F. Franke.—p. 138.
Treatment of Eczemas. V. E. Mertens.—p. 140.

Disturbances from Adhesions Between Gallbladder and Duodenum.—Schneider discusses eighteen cases of this type, eleven in men and seven in women. In all cases there were pronounced gastric symptoms: eructations, pain before and after eating; especially from one to two hours after eating. The pain was not very severe but had extended over a period of years. Nothing pointed to gallbladder disease; no icterus, no colicky pains. The personal history suggested rather duodenal or gastric ulcer. In nine cases the stomach was displaced to the right, which Schneider regards as an important symptom. The operative findings at cholecystectomy were in sharp contrast to the duration and severity of the symptoms. From the upper portion of the duodenum there were veil-like and in some cases firmer adhesions extending into the gallbladder, which was always free from stone, the mucosa apparently sound. The duodenum, pylorus and stomach showed no signs of ulcer. One patient died from acute postoperative dilatation of the stomach. The others have been free from all disturbances to date.

Correction of Rachitic Bone Curvatures.—Rabl adds to the diet a salt mixture from which many more acid than alkaline valences are liberated in the organism, and then partially obstructs the blood flow in the limbs to be treated. A marked halisteresis is thus brought about in the bones; they become at least as soft and more elastic than with the method of Anzoletti and Roepke. The decalcification process in children from 3 to 4 years old is continued for from eight to twelve days—in older children somewhat longer. The bones become so soft that they can be bent from 30 to 40 degrees by applying only slight force, whereas the remainder of the skeleton continues hard. The later hardening Rabl accomplishes in much the same manner as Anzoletti and Roepke, except that he endeavors to hasten the process by a rational calcium therapy and the usual antirachitic agents. He admits that his procedure appears a serious undertaking from a physiologic point of view, but states that if certain precautions are observed, which he intends to describe more in detail later, no harm can result. He gives no details as to the salt mixture he uses.

Healing of Esophageal Diverticulum Perforating Into the Lung.—Frey reports a case in which a traction diverticulum of the esophagus had perforated into a right bronchus, causing an abscess, easily opened from without. Attempts to close the fistula through extensive rib resections failed, but the fistula was reached through the posterior mediastinum and the pedicle of the diverticulum was resected and the stump invaginated. Three weeks after the operation the patient could eat any food without discomfort. Eight weeks have passed without disturbance. All that remains to do is to close the lung cavity and the opening in the chest wall.

Treatment of Tuberculous Fistulas with Copper Sulphate.—Franke injected a copper-zinc solution (6 parts copper sulphate and 6 parts zinc sulphate to 88 parts water) in a stubborn case of fistulas following hip joint resection, which had resisted all attempts to heal it—including injection of bismuth paste. After five injections of the copper-zinc solution, the extensive fistulas healed readily, and there has been no recurrence. Since then he has used the solution with success not only on tuberculous fistulas but also in cavities and wounds with tuberculous or torpid granulations. The operator should protect his hands with gloves, as the solution injures healthy tissues.

Zentralblatt für Gynäkologie, Leipzig

48: 61-104 (Jan. 19) 1924

*Etiology of Prolapse of Uterus. T. Heynemann.—p. 62.
*Influence of the Pituitary Body. J. Hofbauer.—p. 65.
Irradiation of the Pituitary Gland. H. Hirsch.—p. 76.
*Blood Platelets in Gynecologic Hemorrhages. W. Vogel.—p. 79.
Nonspecific-Specific General Therapy as an Aid in the Local Treatment of Gonorrhea in Females. G. Kaboth.—p. 82.
Dermoid of the Ovary in Three Sisters. A. Sippel.—p. 85.
Three Cases of Ileus in Pregnancy. W. Schiller.—p. 86.
Childbirth with Uterus Bicornis Unicollis. Johannsen.—p. 91.
Fecundity and Obesity. H. Kritzler.—p. 94.

Etiology of Prolapse of the Uterus.—Heynemann concludes that some women suffer from prolapse of the uterus solely owing to a constitutional predisposition. Others are protected from it by their constitution in spite of considerable damage occurring during and after childbirth. However, if the damage is too great, prolapse will occur in spite of the best constitution.

Influence of the Pituitary Body on Menstruation and Corpus Luteum.—Hofbauer reports that by means of heavy roentgen doses (an erythema dose over each temple at 30 c.c. focal distance from the skin) he was able in certain instances to suppress the menses, and, again, in amenorrhea with small doses he could bring on the menses. His researches lead him to regard the pituitary gland and the midbrain as the trophic vegetative central organs for the reproductive organs in general and the ovaries in particular. It is possible that the corpus luteum serves as a retarding brake on vegetative performances.

Behavior of Blood Platelets in Gynecologic Hemorrhages.—Vogel found that in gynecologic hemorrhages, especially in so-called essential hemorrhages, the total number of blood platelets and the ratio of the larger to the smaller types is normal. Essential thrombopenia is exceptional.

Zentralblatt für innere Medizin, Leipzig

45: 69-80 (Feb. 2) 1924

*Injections of Sodium Nitrite. E. Nagy.—p. 69.

Injections of Sodium Nitrite in Treatment of Vasomotor Disturbances.—Nagy confirms the favorable effects of subcutaneous injections of sodium nitrite as recommended by Schlesinger. He used a 2 per cent. solution which did not cause local pains. Intermittent claudication was regularly improved by the first injection of 1 to 2 c.c. of this solution, and the patients were relieved for months when he administered the drug daily or every other day for two or three weeks. The results were also excellent in angina pectoris and in arteriosclerotic and nephritic hypertension.

Casopis lekaruv ceskych, Prague

63: 129-256 (Feb. 2) 1924. Dedicated to Rubeska

Rubeska's Seventieth Birthday. A. Ostrcil.—p. 129.
Delivery of Placenta and the Puerperal State. Chvojka.—p. 134.
Obstetric Practice. F. Kás.—p. 138.
*Extirpation of Corpus Luteum. A. Ostrcil.—p. 139.
*Medals and Tokens Illustrative of Obstetrics. Mastný.—p. 147.
Changes of Hemolytic Streptococci. Pruska.—p. 155.
*The Kielland Forceps. Pruska.—p. 157.
*Dangers of Intraspinal Anesthesia. Rychlík.—p. 161.
Inflammations of the Adnexa. Ptácník.—p. 167.
Preventive Value of Gymnastics. Lankasová-Burianová.—p. 170.
*Retroversion of Puerperal Uterus. J. Tuma.—p. 173.
Phantom Pregnancy and Denied Pregnancy. K. Hrdlicka.—p. 175.
*Tar Cancer in Rabbits. O. Bittmann.—p. 177.
Hemorrhage from Ovary. O. Bittmann.—p. 183.
Cancer of Rectum in Pregnancy. O. Bittmann.—p. 187.
*Results in Irradiated Cancer. O. Bittmann and J. Frühauf.—p. 191.
Oophoritis in the Pregnant. O. Srb.—p. 204.
*Climacteric Metrorrhagias. O. Srb.—p. 209.
*Hematology of Parturition. J. Saidl and V. Tuma.—p. 213.
*Diagnosis of Narrow Pelvis. V. Rubeska.—p. 220.
Treatment of Placenta Praevia. B. Bocek.—p. 231.
Tuberculosis in the Pregnant. B. Bocek.—p. 234.
*Histology of Ovaries in Fibroids. Mazal and Bocek.—p. 237.
Sunlight Treatment of Adnexa Tumors. J. Frühauf.—p. 241.
Roentgen and Radium Treatment in Germany and France. J. Frühauf.—p. 245.
Treatment of Scleroma. K. Výmola.—p. 253. Cont'd.

Extirpation of Corpus Luteum.—Ostrcil extirpated the corpus luteum or a ripening or ruptured follicle in sixty-five women undergoing an operation for retroversion or retroflexion of the uterus. Only patients with a regular menstrua-

tion cycle were used. He also took precautions to exclude the presence of a corpus luteum in the other ovary. If the operation was performed within three to nine days after the menstruation, the next menstruation was only slightly delayed (one or two days) except in two cases, in which the full cycle failed. There was not much difference up to the thirteenth day, except in two patients with acceleration. Excision performed between the thirteenth and nineteenth day delayed the menstruation for fourteen to twenty-eight days, especially in the later stages. It was accelerated only twice in fourteen patients. In the premenstrual period, the menstruation was usually accelerated. He assumes that the first group can be explained by the loss of the stimulating action from the follicle on the uterus. Yet another follicle takes up the task and therefore the delay is slight. In the premenstrual period —in which the changes of the mucosa are at their height— the death of the ovum is premature because of the operation. This causes the earlier appearance of the menstruation. The atypical reactions observed are also discussed.

Medals and Tokens Illustrative of Obstetrics.—Mastný describes various coins, medals and tokens, all of historical midwifery interest. He adds a page of photographic reproductions of nearly a dozen.

The Kielland Forceps.—Pruska confirms the advantages of the Kielland forceps in abnormal presentations of the head and in its rotation. It should not be used by practitioners.

Dangers of Intraspinal Anesthesia.—Rychlík prefers lumbar intraspinal anesthesia to all other methods in abdominal surgery. He recommends to apply a 10 c.c. syringe containing 2.3 c.c. of a 5 per cent. solution of procain (as a maximum), when the cerebrospinal fluid ceases to spurt. He aspirates the fluid slowly up to the 10 c.c. mark, reinjects 0.5 c.c. of this mixture, and aspirates again. Then he reinjects 1 c.c., aspirates again and injects gradually larger doses. Afterward he immediately tilts the table for the Trendelenburg position. A caffein injection should be given one hour before the operation.

Retroversion of Puerperal Uterus.—Tuma warns against declaring a puerperal retroversion as due to labor. Such a diagnosis is permissible only if the woman had been examined and found normal before the third month of pregnancy. With slight retroversion, the pregnant uterus changes after this time into a normal position.

Accelerated Tar Cancer in Rabbits.—Bittmann obtained within eight to eighteen days cancer formation on the ear of rabbits after application of tar. He attributes this rapid development to the use of petroleum benzin which removed the fat before the tar was applied. The acceleration of the growth may be due not only to the increased permeability by the petroleum benzin, but also to its narcotic action with irritation of the deep layers.

Results in Irradiated Cancers.—Bittmann and Frühauf describe the histologic changes of cancers of the uterine cervix after roentgen-ray treatment. Photomicrograms are added. They followed the blood changes closely. A strong increase in neutrophils and decrease in lymphocytes marked the fatal cases. The general results were favorable. Nevertheless they had the impression that the fatal termination in some patients was accelerated by this treatment. It is impossible to know such cases in advance.

Climacteric Metrorrhagias.—Srb concludes from his examinations of the uterine mucosa and ovaries that the metrorrhagias occurring at the beginning and end of the period of sexual development are in reality menorrhagias. One ovum ripens and causes the functional preparation of the mucosa of the uterus. If the ovum is not fertilized, necrosis of the mucosa follows in a regular menstruation. If the ovary does not work as yet or function is now waning, the next ovum does not mature at all, and the uterine mucosa does not regenerate. The menorrhagia continues.

Hematology of Parturition.—Saidl and Tuma publish their observations on the leukocytes in pregnancy, labor and the postpartum period. They investigated the changes occurring after injections of foreign proteins and other colloids.

Diagnosis of Narrow Pelvis.—Rubeska finds that external measurements of the pelvis are only misleading. The history (rickets, previous complicated labor), shape of abdomen, impression of fetal head into the pelvis, and Zangemeister's conjugate diameter are helpful.

Histology of Ovaries in Fibroids.—Mazal and Bocek found changes in the ovaries in the majority of patients with uterine fibroids.

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Medical Education in England. G. van Rijnberk.—p. 538. Cont'n.
Cyst in the Larynx: Two Cases. C. E. Benjamins.—p. 542.
*To Obtain a Drop of Serum. H. L. M. van der Hoff.—p. 549.
Auricular Flutter and Fibrillation in Total Heart Block. S. de Boer.—p. 550.
*Bleeding in the Colon. C. G. Vervloet.—p. 570.
*Erroneous Ideas on Nutrition. J. de Groot, Sr.—p. 577.
Omentum Tissue Protruding Through Hernia. Huese.—p. 580.
*Sciatica Under Roentgen Rays. J. Sanders.—p. 581.

To Obtain a Drop of Serum for Serial Examination.—Van der Hoff draws the blood into a capillary pipet and places the pipet without fusing in a centrifuge glass containing a drop of mercury. The mercury plugs the pipet, and a single drop of serum can thus be obtained, ample for refraction tests.

Bleeding in the Colon.—Vervloet refers to intestinal hemorrhage for which none of the usual explanations can be advanced, describing five cases. In one woman of 36 the profuse hemorrhage was the first and long the only symptom. On the assumption by exclusion of grave colitis, local treatment through cecostomy was applied. In a second case, the overlarge spleen misled the diagnosis at first. The veins in the wall of the colon were unusually numerous and wide, and colectomy proved the only means to put an end to the repeated hemorrhages. In one child and in one man, intense fermentation seemed to be responsible for the irritation of the colon which was accepted by exclusion as the source of the bleeding. Regulation of the diet cured the condition, and the assumption was not confirmed by direct inspection. In the entire group, none of the usual methods of clinical research had given any clues.

Erroneous Ideas on Nutrition.—De Groot presents evidence to prove that the idea that uric acid is toxic is a mistake. Also the idea that urea and uric acid are not produced on a vegetarian diet. He quotes from vegetarian literature to show that the data presented when viewed with an impartial mind often prove the opposite of what the writers claim. Their description of the Trappist monasteries, for instance, states that when "the monks are weak and ailing, they are given meat on the doctor's prescription."

Roentgen-Ray Treatment of Sciatica.—Sanders could scarcely get up the third day of his sudden attack of intense sciatica, which he bore only with the aid of morphin. Then various regions of the sciatic nerve were exposed to the roentgen rays, and by evening the pain had almost completely disappeared. The cure was completed by exposure of the tibialis the next day. He had witnessed the same brilliant result in a patient. In the two cases the effect in a day was more perfect than with three weeks of the usual bed rest and heat treatment.

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Relations Between Iridocyclitis and Glaucoma. B. Malling.—p. 97.
*Treatment of the Lacrimal Passages. A. E. Lidström.—p. 131.
Normal and Abnormal Color Vision. H. Rønne.—p. 147.
*Periodical Transient Episcleritis. O. Heinonen.—p. 166.
Treatment of Xerophthalmia with Vitamin A. O. Blegvad.—p. 172.
Hemeralopia and Blue-Blindness. H. Larsen.—p. 177.
Keratitis as Complication of Mumps. K. K. K. Lundsgaard.—p. 185.

Treatment of the Lacrimal Passages.—Lidström directs attention to untoward symptoms arising from inconsiderately probing the lacrimal passages. He advocates lavage instead of probing, if possible. Nevertheless, peripalpebral edema has arisen from even simple lavage. Therefore, this latter should be performed with normal salt solution.

Recurring Episcleritis.—Heinonen infers from the familial occurrence of the periodical transient episcleritis in the case described, and its being combined with the uratic diathesis, that this rare disease is based on heredity and abnormal metabolism.